



# PDC smart® kiosk service manual





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**PDC Smart® Kiosk** Service Manual  
Document MN-SV-04  
Revision A

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## CONTACT INFORMATION

Precision Dynamics Corporation contact information for the United States and the technical support department are listed below. For additional contact information, refer to the contact page on the company's website.

**Precision Dynamics Corporation**  
13880 Del Sur Street  
San Fernando, CA 91340-3490  
[www.pdcorp.com](http://www.pdcorp.com)  
Tel 818-897-1111  
Fax 818-899-4045

**Technical Support**  
Monday through Friday  
8:00am – 5:00pm PST  
Tel 866-403-6526 x1262  
Fax 818-686-9336  
[techsupport@pdcorp.com](mailto:techsupport@pdcorp.com)



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# SAFETY

## S.1 OVERVIEW

This document provides information on configuring the **PDC Smart® Kiosk** and preventative maintenance, including installing/reinstalling user replaceable components. Maintenance should only be performed by qualified personnel.

Comply with all federal and state safety laws and regulations when performing repairs. Read and comply with all hazard advisory placards or signs (**WARNINGS** and **CAUTIONS**) placed on equipment and enclosure. They warn of potential hazards to personal safety and possible damage to equipment if correct maintenance practices are not followed.

## S.2 KIOSK CARE AND SAFETY

Keeping the kiosk clean and in good working condition will prolong its serviceable life, ensure hardware safety, and encourage customers to utilize the kiosk.

- Keep kiosk housing clean; remove dirt, grit, grime, and stains from surfaces. The kiosk is exposed to many elements (dust, pollen, moisture, heat, cold), body oils, and many other factors that can affect appearance and operation.
  - Clean kiosk monthly if kept in a high traffic area.
  - Clean kiosk quarterly if kept in a low traffic area.
- Keep kiosk interior clean; remove dust, dirt, grit, and grime from hardware surfaces.
- Keep kiosk fan clean to ensure proper ventilation for the kiosk's hardware.
  - DO NOT clean fan while powered ON, unplug unit from surge protector before cleaning.
  - DO NOT spray cleaning product on fan. Use a dampened soft cloth or soft brush.
  - DO NOT allow dust to accumulate on fan, this can damage the fan motor and cause components in the enclosure to overheat.
- DO NOT expose kiosk to rain or extreme humidity. Keep kiosk dry.
- DO NOT spill cleaning products or any other liquid on the hardware in the kiosk.

- Inspect all kiosk hardware if there has been exposure to moisture or liquid spills. Replace hardware that has been saturated with any liquid.
- Only use mild detergent and water on a soft lint-free cloth to clean the kiosk exterior or interior surfaces. **DO NOT** use abrasive cleaners, alcohol (methyl, ethyl or isopropyl) or any strong solvent that could damage the kiosk's surfaces.

## S.3 ELECTRICAL

The PC computer provides electrical power to the Magnetic Stripe Reader and the RFID Reader through their USB cable connections. All the other peripherals, including the PC computer, are plugged into the surge protector. When shutting down the PC computer, only the Magnetic Stripe Reader and the RFID Reader power OFF.

**Always unplug the following devices or power OFF the surge protector before performing maintenance on any of the following:**

- PC Computer
- Touchscreen
- Audio Amplifier
- Receipt Printer (do not unplug printer when feeding paper or performing a print-test)
- Bill Validator
- Digital QC Power Filter
- **DO NOT** defeat the safety purpose of the polarized or grounding-type plug on the hardware.
  - **DO NOT** attempt to fit the plug into an outlet that has not been configured for this purpose.
  - **DO NOT** use a damaged power cord.
  - Protect the power cord from being pinched particularly at plugs and at the point where they exit from the amplifier.
  - Use only the power cords that were provided with the hardware.

**Always unplug the USB cable before performing maintenance on these devices:**

- Magnetic Stripe Reader
- RFID Reader

## S.4 RECEIPT PRINTER SAFETY AND CARE

- The Swecoin TTP 2030 receipt printer has an integrated guillotine cutter below the green release lever. **Keep fingers away from the cutter when the printer is powered ON.**
- DO NOT perform maintenance on the receipt printer when powered ON; unplug the printer or power OFF the surge protector. (Power can be ON when feeding paper or test printing.)
- DO NOT clean printer while powered ON, unplug the printer or power OFF the surge protector.
- DO NOT perform any maintenance (cleaning/repairs) immediately after printing, the print head will be very hot. Allow printer to cool before performing maintenance.
- DO NOT touch the print head or heating line with bare hands.
- DO NOT use liquid or spray products on printer enclosure or components. Only use ethyl or isopropyl alcohol and a cotton swab to clean print head.
- DO NOT saturate print head when cleaning.

## S.5 COMPUTER SAFETY AND CARE

Before powering off the kiosk's computer, save and close any open files, and exit any open programs. For instructions on shutting down the kiosk computer, refer to [“Shutdown the Kiosk,” on page 1-7 \(Section 1\)](#). To startup the kiosk computer, refer to [“Startup the Kiosk,” on page 1-5](#).

To disconnect a cable with a strain-relief loop pull on the loop, not the cable itself. To disconnect cables that have connectors with locking tabs; press in on the locking tab before disconnecting the cable. To avoid bending any connector pins when connecting cables, ensure that male and female connectors are correctly oriented and aligned.

To disconnect a network cable, first unplug the cable from the Digital QC Power Filter and then unplug it from the network wall jack.

## S.6 BILL VALIDATOR SAFETY AND CARE

- The cashbox and acceptor module are HOT SWAPPABLE and can be removed when the unit is powered ON.
- DO NOT clean inside the cashbox enclosure while the Bill Validator is powered ON; unplug unit or power OFF the surge protector.
- When handling the Bill Validator's acceptor module, DO NOT handle the acceptor module by the card end.

## S.7 TOUCHSCREEN SAFETY AND CARE



**WARNING:** The touchscreen consists of devices that may contain mercury, which must be recycled or disposed of in accordance with local, state, or federal laws. (Within this system, the backlight lamps in the monitor display contain mercury.)

- THE TOUCHSCREEN IS NOT USER SERVICEABLE. All repairs must be performed by a qualified technician.
- To reduce the risk of electric shock, follow all safety notices.
  - DO NOT open the touchscreen case.
  - DO NOT disassemble the brick supply or display unit cabinet.
- Use only the power cord that comes with your touchscreen. Use of an unauthorized power cord may invalidate your warranty.
- DO NOT block or insert anything inside the ventilation slots located on the sides and top of the touchscreen.
- DO NOT POUR LIQUID ONTO THE TOUCHSCREEN. Keep touchscreen dry. If liquid gets inside the touchscreen, a qualified service technician must check the unit before it can be powered ON.
- Power OFF and unplug the touchscreen from the power outlet before cleaning. The power button is located on the back of the touchscreen, see [Figure 3–16 on page 3-20](#) and [Figure 3–17 on page 3-21 \(Section 3\)](#).
- To clean the screen, spray glass cleaner on a soft lint-free cloth. DO NOT spray the cleaner directly on the monitor. DO NOT wipe the screen with a paper towel or sponge that could scratch the surface.
- DO NOT use alcohol (methyl, ethyl or isopropyl) or any strong solvent to clean the screen.
- DO NOT use thinner or benzene, abrasive cleaners or compressed air to clean screen.
- To clean the display cabinet (non-screen area) use a cloth **lightly** dampened with a mild detergent.



## **S.8 AUDIO AMPLIFIER SAFETY AND CARE**

- **UNPLUG THE AMPLIFIER DURING LIGHTNING STORMS.**
- **UNPLUG THE AMPLIFIER WHEN UNUSED FOR LONG PERIODS OF TIME.**
- To reduce the risk of fire or electric shock:
  - DO NOT expose the amplifier to rain or moisture.
  - DO NOT use this amplifier near water.
- Replace amplifier if it has been exposed to rain or moisture or if liquid has been spilled on the amplifier.
- Clean amplifier with a dry cloth, do not use any sprays or liquids to clean.
- DO NOT block ventilation openings.
- DO NOT install amplifier near any heat sources (radiators, heat registers, stoves, other amplifiers, etc.) that produce heat.
- Only use attachments/accessories specified by the manufacturer.
- Refer all servicing to qualified service personnel if the amplifier has been damaged in any way or does not operate normally or has been dropped.

## **S.9 REFERENCE STANDARDS**

### **FCC Class A**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **CANADA ICES/NMB-003 Class/Classe(A)**

This Class A Digital Apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

ANSI/UL 60950-1 1st Edition “(2003) Safety of Information Technology Equipment”

CAN/CSA C22.2 No. 60950-1-03 “Safety of Information Technology Equipment”

CENELEC EN 60950-1, 1st Edition (2001) “Safety of Information Technology Equipment”

IEC 60950-1, 1st Edition (2001) “Safety of Information Technology Equipment”



# SECTION 1

## GET TO KNOW THE KIOSK

### 1.1 PRODUCT DESCRIPTION

The **PDC Smart® Kiosk** is a self-service terminal that supports a variety of customer convenience applications utilizing PDC Smart Band® wristbands at leading leisure and entertainment venues. The **PDC Smart® Kiosk** is a fully integrated unit with the following components (see [Figures 1–1](#) through [Figures 1–3](#) on [pages 1-2](#) and [page 1-4](#)).

- Touchscreen monitor to enable multimedia playback, application navigation, and data entry.
- RFID Reader/Writer to retrieve guest-specific account information or store data to a **PDC Smart® Kiosk** wristband.
- Magnetic Stripe Reader (MSR) to capture credit card or debit card account number information.
- Bill Validator to pay for services or add funds to an account using cash.
- Thermal receipt printer to issue transaction records or print simple reports.
- PC computer to drive individual components through application specific software.

The **PDC Smart® Kiosk** is a flexible platform capable of supporting a variety of applications or services, and may vary by property. The description of software in this manual is limited to system start-up and component configurations. For questions regarding the operation of specific software applications, please contact PDC Technical Support.



**Figure 1–1. Front View of Kiosk**

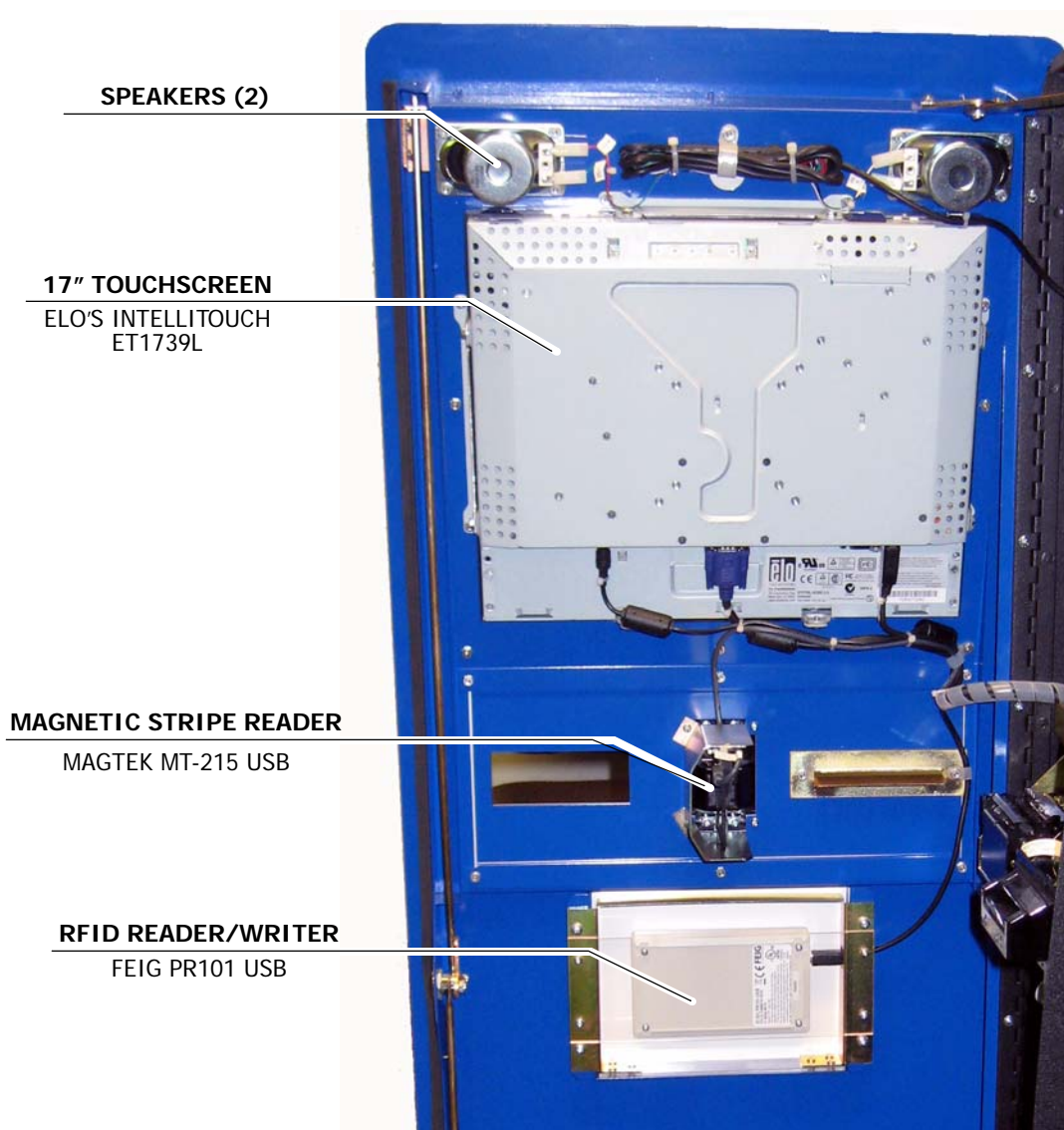
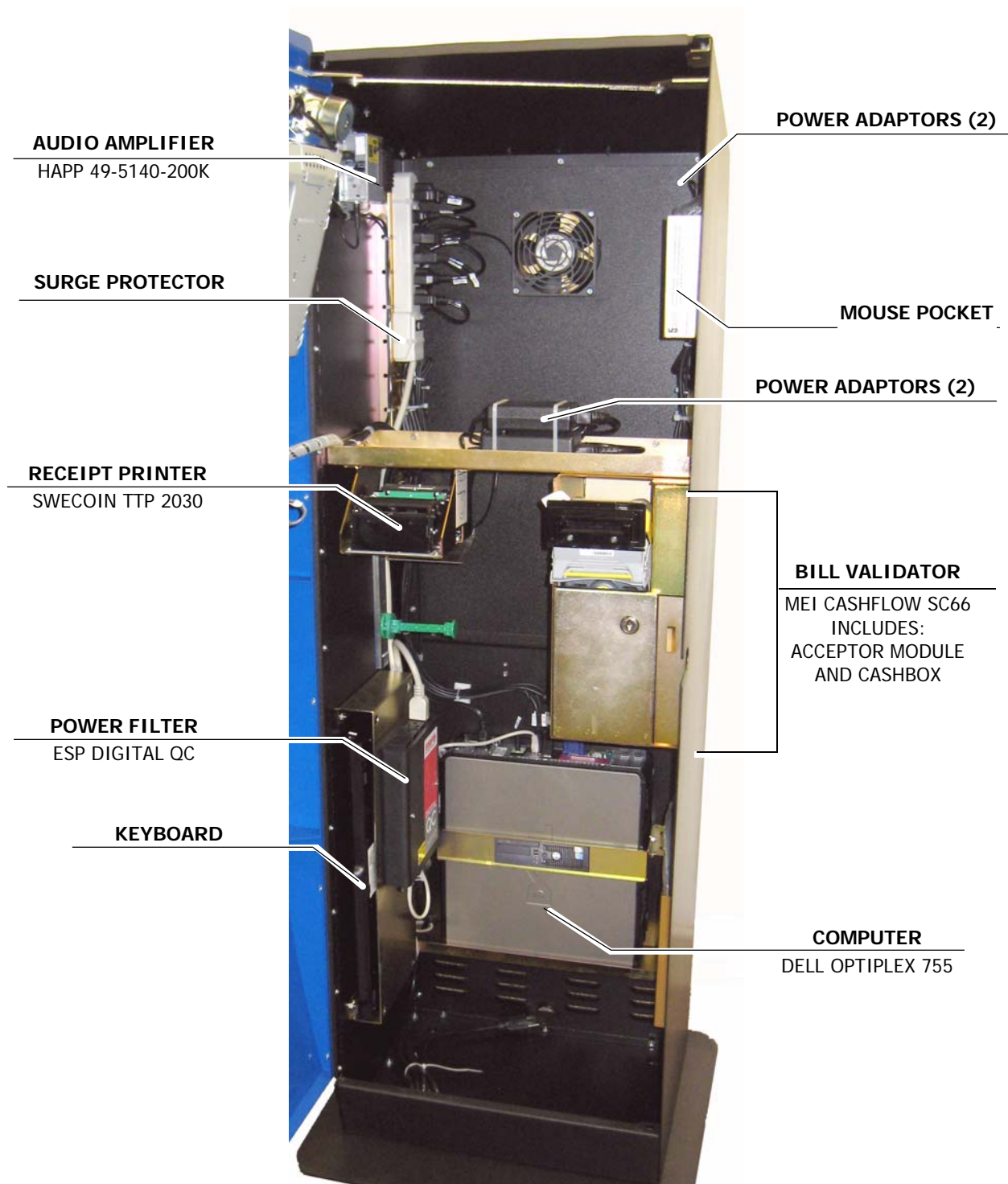


Figure 1–2. Kiosk Components Installed on Door



**Figure 1–3. Kiosk Internal Components**

## 1.2 STARTUP THE KIOSK

1. Unlock and open the kiosk door.



**Figure 1–4. Location of Keylock on Kiosk**

2. Kiosk unplugged or surge protector off? NO: proceed to Step 3. YES: see below:
  - If the kiosk was unplugged from the wall outlet, first plug in the kiosk.  
(The kiosk may have been unplugged for maintenance.)
  - If the kiosk surge protector is OFF, turn surge protector ON.  
(The kiosk may have been turned off at the surge protector for maintenance.)
3. If the PC computer is OFF, press the computer's **POWER** button on the front.  
(The computer faces downward as shown in [Figure 1–5](#). The holding bracket has a photo of the computer face, which is similar to [Figure 1–6 on page 1-6](#).)



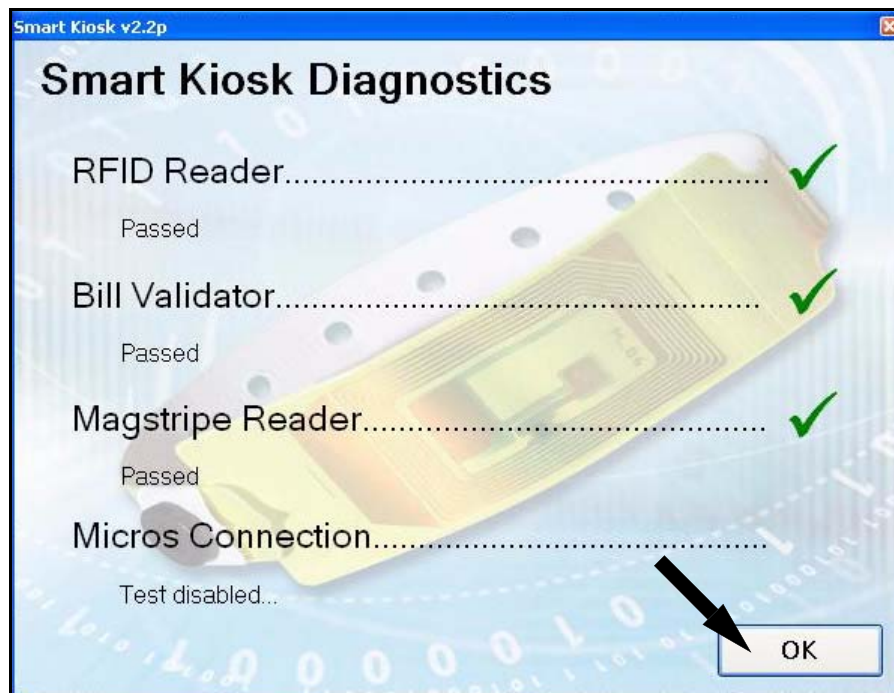
**Figure 1–5. Location of Kiosk Computer**





**Figure 1–6. Computer, Front View**

4. The Windows XP operating system boots up.
5. The system diagnostic runs and the diagnostic screen is displayed ([Figure 1–7](#)). Green check marks indicate hardware is operational. Red X's indicate hardware errors. To correct hardware errors, refer to [Section 4, “Troubleshooting”](#).



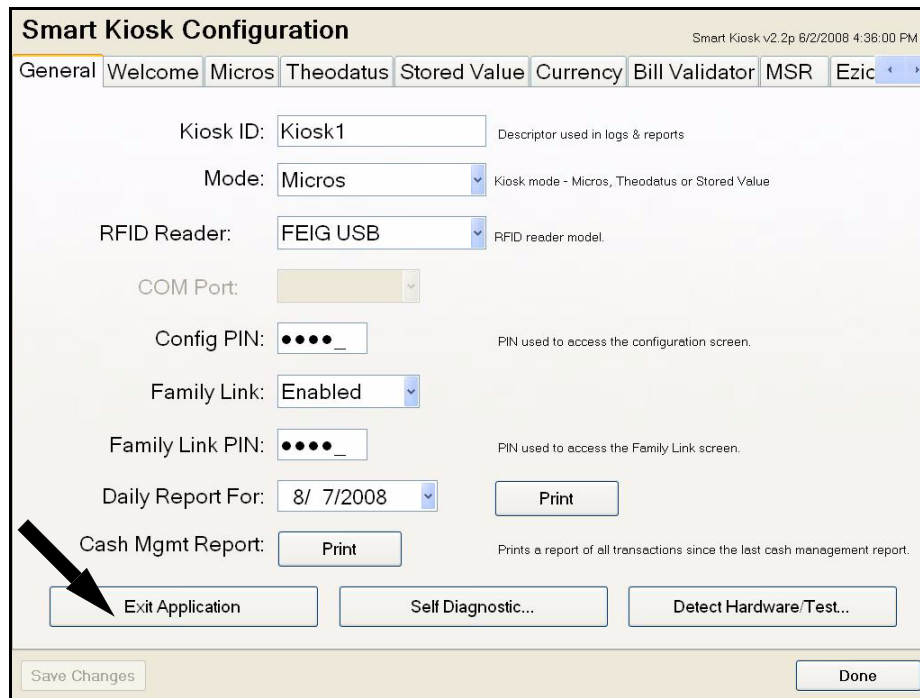
**Figure 1–7. Smart Kiosk Diagnostics Screen**

6. Once the diagnostic is complete, press **OK**.
7. The **WELCOME** screen or video displays.
8. Close and lock the kiosk door.
9. Kiosk is ready for use.



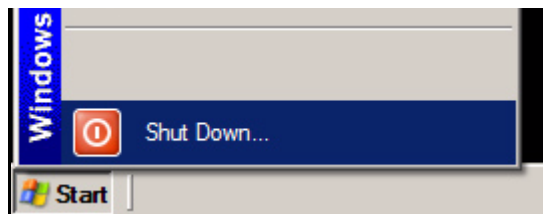
## 1.3 SHUTDOWN THE KIOSK

1. Access the **Configuration Utility** per instructions on [page 2-2 \(Section 2\)](#).
2. Select **EXIT APPLICATION** on the **General** tab.



**Figure 1–8. Exit Application, Configuration Utility**

3. The kiosk application shuts down and the Windows XP desktop displays.
4. Close any other applications running on the computer.
5. From the desktop, select **START>SHUTDOWN**.



**Figure 1–9. Windows Desktop: Start>Shutdown**

6. The PC computer will shut down.

## 1.4 INSTALL RECEIPT PAPER



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**WARNING:** The receipt printer (Swecoin TTP 2030) has an integrated guillotine cutter below the green release lever. Keep fingers away from the cutting mechanism when printer is powered ON.

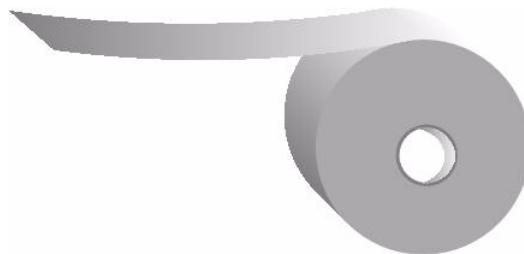
---

Install a new receipt paper roll by following the instructions below. Use paper rolls that conform to the specifications in [Table 1–1](#).

**Table 1–1. Receipt Paper Roll Specifications**

Paper Width	80mm
Paper Weight	30# max.
Paper Thickness	4.4 mil (.111mm) max.
Core ID	1" (25.4mm)
Roll OD	180mm max.
Thermal Coating	outer side
Sensitivity - Activation	~68°C / Saturation ~75°C

1. Make sure printer is powered **ON**.
2. Turn the paper roll so that the paper unwinds from the top of the roll ([Figure 1–10](#)).



**Figure 1–10. Receipt Paper Roll, Unwind Direction**

3. Tear off a full turn of the paper from the new roll.

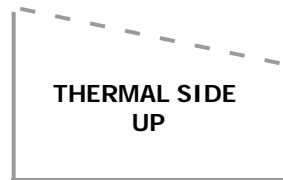


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**CAUTION:** ALWAYS tear a full turn of paper off the roll. The outer end of the paper is usually fixed to the roll glue or other self-adhesive substance that might cause a paper jam or damage the print head.

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4. Cut off the end of the paper at a 70° or 90° angle (see [Figure 1–11](#)).

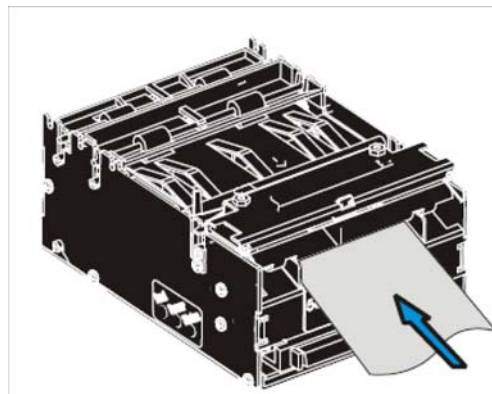


**Figure 1–11. Receipt Paper Roll, Cut End of Paper**



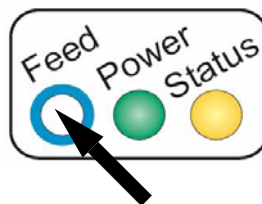
**NOTE:** The paper sensor is located on the same side as the interface connector. If the paper is cut in the opposite direction to that shown in [Figure 1–11](#), the sensor will not detect the paper.

5. Insert the paper through the paper entry opening at the back of the printer.



**Figure 1–12. Receipt Printer, Load Paper**

6. The paper should auto feed and cut a piece from the roll. (If the paper does not auto feed, press the **FEED** button.)



**Figure 1–13. Receipt Printer, Feed Button and LEDs**

7. If required, print a test receipt; see [“Test Print a Receipt” on page 1-10](#).

### 1.4.1 Test Print a Receipt

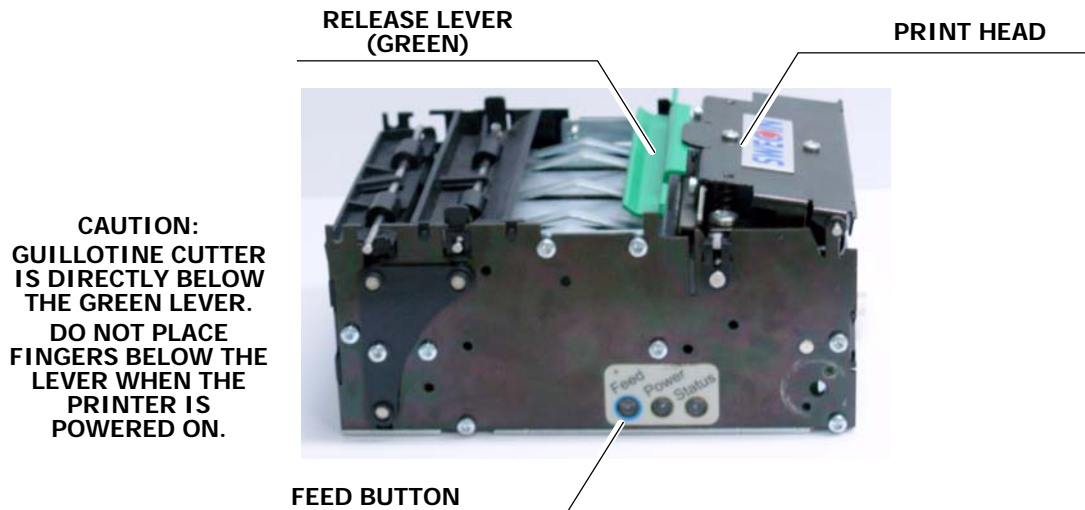


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**WARNING:** The Swecoin TTP 2030 receipt printer has an integrated guillotine cutter below the green release lever. Keep fingers away from the cutter when the printer is powered ON.

---

1. Press the green release lever toward the rear of the printer and **slightly** lift the print head (Figure 1–14). (Lifting print head too far will cause the paper to fall out.)
2. Press and hold the **FEED** button.



**Figure 1–14. Receipt Printer**

3. While holding the **FEED** button, lower the print head until the paper auto loads.
4. Release the **FEED** button.
5. A self-test printout is produced.



---

**NOTE:** The printer's self-test printout contains the firmware program version and date, control board revision number and serial number, name of loaded fonts and logotypes, and the parameter settings.)

---

6. The printer exits self-test mode and goes on-line.

## 1.5 EMPTY THE CASHBOX

If the Bill Validator's acceptor module displays three **solid red LEDs**, the cashbox is full. Authorized personnel should empty the cashbox on a daily basis.

1. Before removing cashbox:
  - a. Print a Daily Receipt or a Cash Management Receipt. (Refer to [“Print a Daily Report” on page 1-13](#) or [“Print a Cash Management Report” on page 1-14.](#))
  - b. Shutdown the kiosk computer and power OFF the surge protector. (Refer to [“Shutdown the Kiosk” on page 1-7.](#))
2. Unlock the cashbox door.
3. Remove the cashbox by firmly pulling the yellow strap until it releases from chassis. (There will be some resistance from the two springs inside the chassis.)



**Figure 1–15. Remove Cashbox**



---

**CAUTION:** For safety and to minimize kiosk downtime, use an empty cashbox to swap out the full cashbox. Then transport the full cashbox to a safe place that ensures that personnel and cash are protected.

---

4. Unlock the security lock at the bottom of the cashbox (Figure 1–16.)
5. Squeeze the yellow plug towards center of cashbox and pull outwards (Figure 1–16).
6. Remove cash. (The cash is held in place by a spring loaded mechanism that can be pushed toward the cashbox's rear.)



**Figure 1–16. Cashbox, Unlock and Open**

7. Close the cashbox and insert the empty container in the chassis.
  - a. Align the grooves on each side of cashbox with the guides in the chassis.
  - b. Push cashbox into chassis until its rear is flush with chassis wall. There will be some resistance from the two springs inside the chassis.
  - c. After a few seconds, you should hear the acceptor module connect to the cashbox.
8. Close and lock the cashbox's enclosure.

## 1.6 PRINT A DAILY REPORT

1. Access the **Configuration Utility** per instructions on [page 2-2 \(Section 2\)](#).
2. Select **GENERAL** tab.
3. Select arrow next to the **PRINT DAILY REPORT** field ([Figure 1-17](#)).

**Smart Kiosk Configuration** Smart Kiosk v2.2p 8/2/2008 4:38:00 PM

General | Welcome | Micros | Theodatus | Stored Value | Currency | Bill Validator | MSR | Ezic

Kiosk ID: Kiosk1 Descriptor used in logs & reports

Mode: Micros Kiosk mode - Micros, Theodatus or Stored Value

RFID Reader: FEIG USB RFID reader model

COM Port:

Config PIN: PIN used to access the configuration screen.

Family Link: Enabled

Family Link PIN: PIN used to access the Family Link screen.

Daily Report For: 8/ 7/2008 Print

Cash Mgmt Report: Prints a report of all transactions since the last cash management report.

Exit Application | Self Diagnostic... | Detect Hardware/Test...

**Figure 1-17. Open Calendar for Daily Report**

4. From the calendar select the print date and press **PRINT** ([Figure 1-18](#)).

**Smart Kiosk Configuration** Smart Kiosk v2.2p 8/2/2008 4:38:00 PM

General | Welcome | Micros | Theodatus | Stored Value | Currency | Bill Validator | MSR | Ezic

Kiosk ID: Kiosk1 Descriptor used in logs & reports

Mode: Micros Kiosk mode - Micros, Theodatus or Stored Value

RFID Reader:

COM Port:

Config PIN: the configuration screen.

Family Link:

Family Link PIN: the Family Link screen.

Daily Report For: 8/ 7/2008 Print

Cash Mgmt Report: Prints a report of all transactions since the last cash management report.

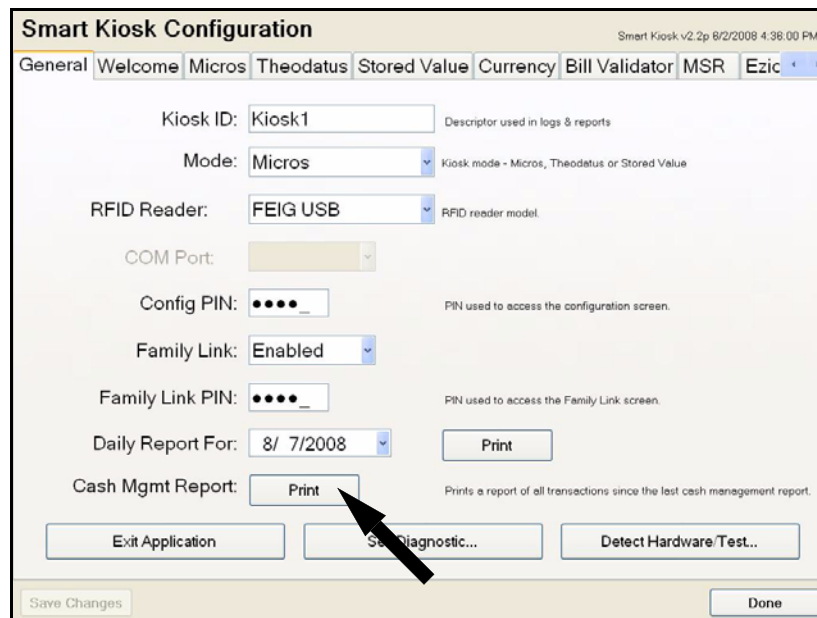
**Figure 1-18. Select Print Date for Daily Report**

5. The receipt printer will print the **Daily Report**.

## 1.7 PRINT A CASH MANAGEMENT REPORT

Each time the **Cash Management Report** is printed it will include all the transactions that have occurred since the last report was printed.

1. Access the **Configuration Utility** per instructions on [page 2-2 \(Section 2\)](#).
2. Select **GENERAL** tab.
3. Next to **Cash Mgmt Report**, press **PRINT** ([Figure 1-19](#)).



The screenshot shows the 'Smart Kiosk Configuration' window with the 'General' tab selected. The window title bar indicates 'Smart Kiosk v2.2p 8/2/2008 4:36:00 PM'. The 'General' tab is active, and the 'Ezic' sub-tab is selected. The configuration fields include: Kiosk ID (Kiosk1), Mode (Micros), RFID Reader (FEIG USB), COM Port (empty), Config PIN (four dots), Family Link (Enabled), Family Link PIN (four dots), and Daily Report For (8/ 7/2008). A 'Print' button is located next to the 'Cash Mgmt Report' label. A black arrow points to this 'Print' button. At the bottom, there are buttons for 'Exit Application', 'Self Diagnostic...', 'Detect Hardware/Test...', 'Save Changes', and 'Done'.

**Figure 1-19. Print Cash Management Report**

4. The receipt printer prints the **Cash Management Report**.



## 1.8 SPECIFICATIONS

Table 1–2 provides the general specifications for the kiosk. Specifications for the hardware installed in the kiosk are provided in Table 1–3 through Table 1–8 on pages 1-15 through 1-18.

**Table 1–2. General Specifications**

Model	PDC Smart® Kiosk 3522-0110-0201-06F
Power	100-125 VAC, 50-60 HZ, 5 AMPS, 600 WATTS
ESP Digital QC Power Filter	Filters the Computer's 10/100 Ethernet Connection
Kiosk Dimensions W x H x D	24" x 66" x 20"
Operating Temperature	42° to 90° F (6° to 32° C)
Storage Temperature	33° to 100° F (1° to 38° C)

**Table 1–3. Touchscreen Specifications (Sheet 1 of 2)**

Manufacturer	Elo TouchSystems of Tyco Electronics Corporation
Model	1739L, 17-inch LCD Open-Frame touchscreen with Steel/black bezel
Display type	Active matrix TFT LCD
Display size and useful screen area	17.0" diagonal, 13.3" / 10.6" horizontal/vertical
Monitor dimensions W x H x D	14.5" x 12.0" x 1.9"
Weight Actual/shipping (approx.)	4.0 kg (8.8 lbs)/5.2 kg (11.5 lbs)
Supported resolutions	1280 x 1024 (optimal) 60, 70, 75 Hz; 1280 x 960 60 Hz; 1152 x 864 75 Hz; 1024 x 768 60, 70, 75 Hz; 800 x 600 56, 60, 72, 75 Hz; 720 x 400 70 Hz; 720 x 350 70 Hz; 640 x 480 60, 72, 75 Hz;
Colors	16.7 million colors
Brightness (typical) LCD panel, with IntelliTouch, with surface capacitive	280 cd/m <sup>2</sup> , 257 cd/m <sup>2</sup> , 238 cd/m <sup>2</sup>
Viewing angle (typical at CR>10)	89°/89° Horizontal (left/right) and Vertical (up/down)
Contrast ratio	1500:1
Input video format	RGB analog
Input sync format	Separate H & V sync, composite sync, and sync-on-green
Input video signal connector	Mini D-Sub 15-Pin VGA type
Scanning Frequency	31.5 - 80.0 kHz / 56.3 - 75 Hz Vertical/Horizontal
Power dissipation Monitor only, and Monitor and power brick	36 W (max.) 40 W (max.)
Power supply	External AC to DC power brick is provided
Input voltage required, Monitor input	+ 12VDC +/- 5%, 2.5A typical, 3.0A maximum
AC to DC power brick input	100 to 240 VAC, 50/60Hz
Operating / Storage Temperature	0°C to 40°C / -20°C to 60°C

**Table 1–3. Touchscreen Specifications (Sheet 2 of 2)**

Humidity Operating Temperature	20% to 80% (noncondensing)
Mean Time Between Failures (MTBF)	50,000 hours demonstrated
Backlight lamp life (typical)	50,000 hours to half brightness
Touch interface	Serial and USB
Agency certifications	UL, cUL, SEMKO, CB, TÜV-T, CE/FCC/VCCI/IC/C-TICK (Class B)
Manufacturer Warranty	3 years

**Table 1–4. Audio Amplifier Specifications**

Manufacturer	Suzo-Happ Group
Model	49-5140-200K, Kiosk Audio Amplifier Kit
Channels	2 Channels
Amplifier Power (approx.)	8 Watts RMS per channel 10% THD (10 Watts RMS @ 16v Input)
Power Input	+ 12 VDC to + 18 VDC minimum 1.5A with either a 2mm Coaxial power jack or .100" center locking header connector
Dimensions W x L X H	3.38" x 4.25" x 2.24"
Mounting	Mounts vertical or horizontal
Audio Input	3.5mm Stereo Jack
Audio Output	.100" center locking header connector
Regulatory	UL Listed

**Table 1–5. Magnetic Stripe Reader Specifications**

Manufacturer	MagTek, Inc.
Model	MT-215 Magnetic Stripe Reader (MSR) - USB w/bezel
Dimensions w/Flat-faced Bezel, W x L x H	4.58" x 4.00" x 3.00"
Reference Standards	ISO 7810 and ISO 7811
Power Input	5V from USB port
Recording Method	Two-frequency coherent phase (F2F)
Message Format	ASCII
Card Speed	3 to 60 ips (7.62 to 152.4 cm/s)
Magnetic Head Durability	500,000 insertion cycles
Electrical Current Normal Mode and Suspend Mode	15 mA (Readers 21065140 & 21065145 draw 35mA) Meets USB 2.0 specification for a Low-power Function
Operating Temperature	-40 to 70°C (-40 to 158°F)
Operating Humidity	10% to 90% noncondensing

**Table 1–6. Bill Validator Specifications**

Manufacturer	MEI
Model	Cashflow SC66 Bill Acceptor (Referred to as the Bill Validator. This unit consists of the acceptor module, cashbox, and chassis.)
Acceptance Rate	98% or greater
Note/Bar Code Coupon Insertion	Up to 50 notes four ways: faceup and down Bar Code Coupons—two way faceup
Note dimensions	62mm – 83mm width
	120mm – 166mm length
Transaction Speed	Approximately three seconds to stack
Escrow	One note or one bar code coupon
Interfaces	Multiple serial protocols
SC Series Cash-box Capacity	Up to 500 notes
Power Source & Consumption	12V – 28VDC
Standby, Accepting, Stacking	10 Watts, 30 Watts, 70 Watts
Operating Temperature	0°C – 60°C
Operating Humidity	5% – 95%

**Table 1–7. RFID Reader/Writer Specifications**

Manufacturer	Feig Electronic
Model	PR101 USB, RFID Proximity Reader
Housing and Color	Plastic ABS, Papyrus White RAL 9018
Dimensions (WxLxH)	3.35" x 4.72" x 1.77"
Protection Class	IP 30
Supply Voltage / Current Draw / Power Con.	5 VDC via USB / 0.5 A max. /2.5 VAC max.
Operating Frequency	13.56 MHz
Transmitting Power	0.5 W +/- 2dB
Antenna / Reading Distance	Integrated / max. 18 cm
Interfaces	RS232 / RS485 (configurable) or USB (12 Mbit)
Optical Indicator	1 LED (multicolor; red/green)
Protocol Modes	FEIG ISO HOST & Scan Mode
Supported Transponders	ISO15693, ISO18000-3-Mode1 (EM HF ISO chips, Fujitsu HFISO chips, KSW Sensor chips, Infineon my-d, NXP I-Code, STM LRI ISO chips, TI Tag-it)
	NXP I-Code1, I-Code UID, I-Code EPC
Address Setting for interface	Device ID of the reader
Operation Temperature	-25°C to 60°C (-13°F to 140°F)
Humidity	5 - 95% (non condensing)

**Table 1–8. Receipt Printer Specifications**

Manufacturer	Swecoin (A Zebra Technology Company)
Model	TTP2030, Thermal Kiosk Printer
Receipt Roll Paper Specifications	Refer to <a href="#">Table 1–1, “Receipt Paper Roll Specifications,” on page 1-8.</a>
Paper Widths	58mm, 60mm, 80mm, 82.5mm
Print Widths	54mm on 58 & 60mm paper (432 dots) 72mm on 80 & 82.5mm paper (576 dots)
Resolution	8 dots/mm, horizontal and vertical
Dim. Without Roll Holder W x H x D	4.13" x 2.56" x 5.71"
Approx Weight w/o paper roll	1.1 kg; 2.42lb
Printer Control	MS Windows drivers for 2000, XP
Sensors	Optical: Out of paper, paper low, paper left in presenter, paper in retract path, black mark Switch: print head lifted, cutter not home
Paper Control	Paper end and paper near end sensors
Print Method	Direct thermal line print
Paper Path	Straight paper path and flip-up print mechanism
Paper Separation	Full cut
Print Speed	Up to 150 mm/second
Sensitivity - Activation	~68°C / Saturation
Presenter	Looping presenter with pull detector and retract & retain function. Stepper motor control for exact positioning.
Eject Length (after cut)	Programmable, full eject, or hold the ticket until customer removes it. Eject or retract of uncollected tickets.
Power supply	24 VDC ±5%, average 2A when printing
Environmental	0 to 50°C, 35 to 75% RH non-condensing
Life Expectancy	Print head: More than 100 km paper. 100 million pulse lines. Cutter: 1,000,000 cuts
Bar Codes	Native Support for UPC, EAN, Code39, Code128, I2/5, ISBN
Controller Board / MTBF	Integrated / Controller board: 90,000 hours
Interface	USB

## 1.9 EXTENDED WARRANTY AND SUPPORT PLAN

Precision Dynamics Corporation's (PDC) warranty and extended warranty programs are designed to reduce downtime if your kiosk has a failure. PDC will provide replacement components for all units under warranty or covered by extended warranty. PDC can provide on-site service at an additional cost. **Standard warranty commences on PDC ship date and expires 12 months after ship date.**

### 1.9.1 Service and Support Contact Information

Service and support requests can be made via telephone and email, refer to the days and times listed below. Precision Dynamics will attempt to diagnose problems with the equipment over the telephone. PDC can use "remote access" software to diagnose problems, check configuration settings, and install software updates or patches. If the problem is hardware related, PDC will ship a replacement part (e.g. keyboard, LCD panel, RFID Reader/Writer, etc.) for the customer to install. PDC can arrange on-site service for an additional cost or if an on-site service contract is purchased. On-site service is next business day. Refer to [Table 1–9, "Warranty Policy," on page 1-20](#) for additional information.

Telephone Support Availability:

Monday through Friday

8:00am – 5:00pm PST

Phone: 866.403.6526 ext. 1262

E-mail: [techsupport@pdcorp.com](mailto:techsupport@pdcorp.com)

## 1.9.2 Warranty Policy

**Table 1–9. Warranty Policy**

Warranty Options	One year warranty includes:	Annual Cost per Kiosk
Standard	<ul style="list-style-type: none"> <li>• Software upgrades</li> <li>• Remote support</li> <li>• Replacement components</li> </ul>	Call PDC for pricing.
On-Site	<ul style="list-style-type: none"> <li>• Software upgrades</li> <li>• Remote support</li> <li>• On-site component replacement</li> </ul>	
Extended (After first year)	<ul style="list-style-type: none"> <li>• Software upgrades</li> <li>• Remote support</li> <li>• Replacement components</li> </ul>	
On-Site Extended	<ul style="list-style-type: none"> <li>• Software upgrades</li> <li>• Remote support</li> <li>• On-site component replacement</li> </ul>	
Non-Warranty Time and Material	<ul style="list-style-type: none"> <li>• Remote Support</li> <li>• Replacement components</li> <li>• On-site (next business day)</li> </ul>	

## 1.9.3 Terms

**Limited Warranty** – Precision Dynamics Corporation warrants to the original purchaser and end user that new PDC equipment sold after the effective date of this limited warranty is free of defects in material and workmanship at the time it is shipped by PDC for a period of one (1) year from the shipment date. This warranty is expressly in lieu of all other warranties, expressed or implied, including the warranties of merchantability and fitness.

Within the warranty period listed above, PDC, its designees and/or authorized service partners, will repair or replace any warranted parts, assemblies or components that fail due to such defects in material and workmanship.

PDC, its designees and / or authorized service partners, shall honor warranty claims on warranted equipment in the event of such a failure within the warranty time periods. All warranty time periods start on the date that the equipment was delivered to the original purchaser.

Precision Dynamics Corporation's Limited Warranty shall not apply to:

- Consumable components, including, but not limited to print heads, paper or parts that fail due to normal wear.
- Equipment that has been modified by any party other than PDC, or equipment that has been improperly installed, improperly operated or misused based upon industry standards, or equipment that has been used for operation outside of the specifications for the equipment.

# SECTION 2

## CONFIGURE KIOSK HARDWARE

### 2.1 DEFAULT HARDWARE SETTINGS

The **PDC Smart® Kiosk** hardware components were configured by the installation technician during installation of the kiosk. [Table 2–1](#) lists the default hardware settings.

**Table 2–1. Kiosk Hardware Default Settings**

ITEM	DEFAULT SETTING
<b>General Settings (see General tab)</b>	
Kiosk ID	User selected
POS Mode	Depends on Kiosk setup. Call technical support for POS questions.
Configure PIN	Default PIN number is <b>0000</b> . User selected - <b>1</b> digit min. <b>5</b> digits max. <i>(The PIN is used to control access to the Configuration Utility.)</i>
Family Link	Disabled <i>(enabled if the Kiosk is setup for Family Link)</i>
Family Link PIN#	Disabled <i>(enabled if the Kiosk is setup for Family Link)</i>
<b>Bill Validator (see Bill Validator tab)</b>	
Port	Virtual COM Port (To obtain the port number refer to <a href="#">"How to Identify Virtual COM Ports using Device Manager"</a> on page 2-10.)
Bill Acceptance Mode	U.S. and Canadian
<b>Magnetic Stripe Reader (see MSR Tab)</b>	
Model Type	MT-215 USB
Port	USB
Credit Cards Accepted	Dependant on POS setup, typical cards: Visa, Mastercard, Discover Card, and American Express
<b>RFID Reader (see General Tab)</b>	
RFID Reader/Writer Model Type	FEIG USB

## 2.2 ACCESS THE CONFIGURATION UTILITY

1. Display the **Configuration Utility**:
  - a. If the **WELCOME** screen or video is not displayed, press **BACK** until it displays (Figure 2–1).



Figure 2–1. Return to Welcome Screen/Video

- b. Rapidly tap the *upper-left-corner* of touchscreen (Figure 2–2) or press C on the keyboard.

RAPIDLY  
TAP SCREEN  
IN THE  
UPPER LEFT  
CORNER

NOTE:  
YOUR WELCOME  
SCREEN OR VIDEO  
MAY DIFFER  
FROM THE IMAGE  
SHOWN.

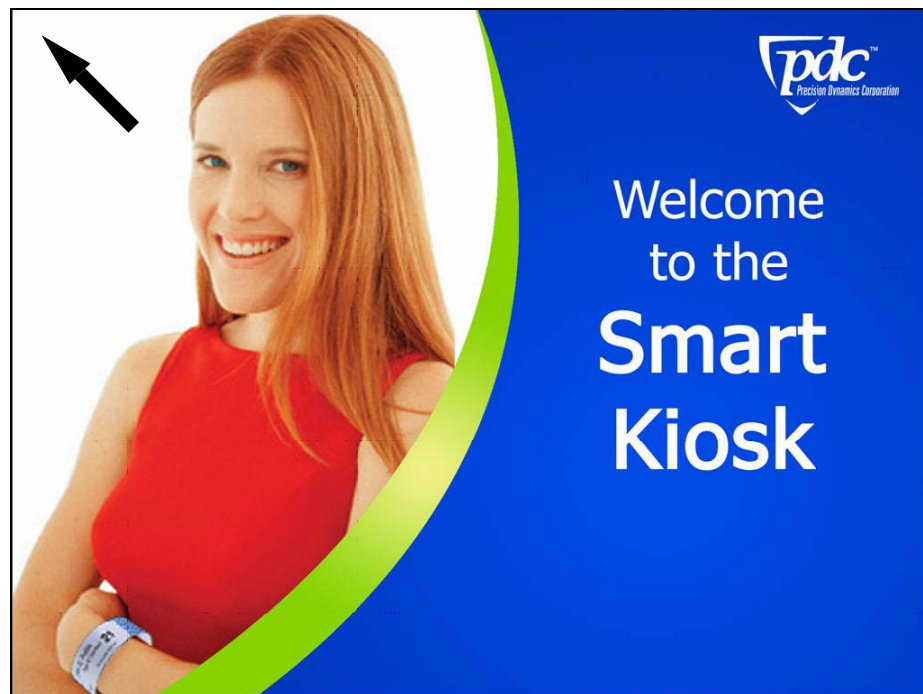
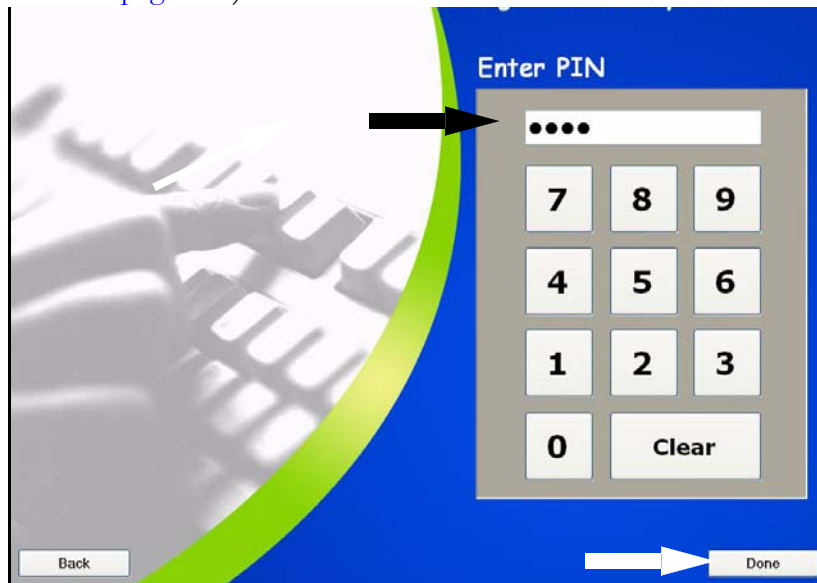


Figure 2–2. Welcome Screen, Example



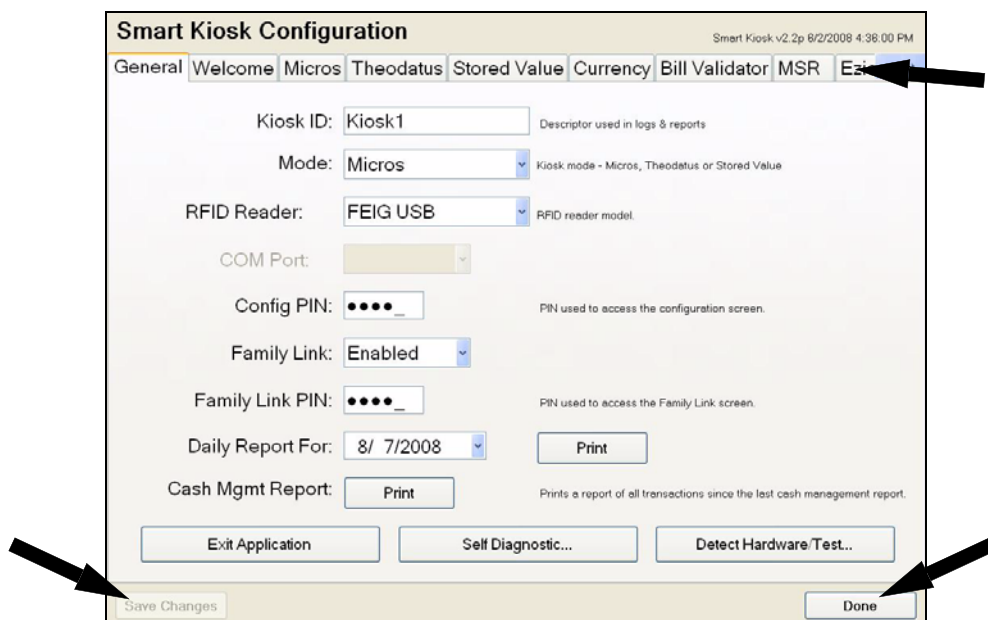
2. Enter PIN number (Figure 2–3). (To setup the PIN number, refer to “Setup PIN Number” on page 2-5.)

**NOTE:**  
THE DEFAULT  
PIN NUMBER  
IS 0000.



**Figure 2–3. Enter PIN Number, Configuration Utility**

3. Configuration tabs have been provided for the kiosk hardware. (Hardware configuration instructions are provided later in this section.)
  - To save configuration changes, press **SAVE CHANGES** and then **OK** (Figure 2–4).
  - Press **DONE** to exit the configuration utility and return to the user interface.



**Figure 2–4. Configuration Screen**

## 2.3 WINDOWS KEY SHORTCUTS

To access Windows XP features while the kiosk application is running, use the **WINDOWS** key (Figure 2–5) on the keyboard. (To cycle between open programs and screens, use **ALT + TAB**.) Table 2–2 lists common **WINDOWS** key shortcuts.



Figure 2–5. Windows Key

Table 2–2. Windows Key Shortcuts

<b>WINDOWS</b>	Displays or hide the <b>Start</b> menu.
<b>WINDOWS + PAUSE/BREAK</b>	Displays the <b>System Properties</b> dialog box.
<b>WINDOWS + D</b>	Displays the <b>Desktop</b> .
<b>WINDOWS + M</b>	Minimize all open windows.
<b>WINDOWS + SHIFT + M</b>	Restore the minimized windows.
<b>WINDOWS + E</b>	Opens <b>My Computer</b> .
<b>WINDOWS + F</b>	Displays the dialog box to perform a <b>Search</b> .
<b>CTRL + WINDOWS + F</b>	Displays the dialog box to search for a computer
<b>WINDOWS + F1</b>	Displays <b>Windows Help</b> .
<b>WINDOWS + R</b>	Opens the <b>Run</b> dialog box.
<b>WINDOWS + U</b>	Opens the <b>Utility Manager</b> .
<b>WINDOWS + TAB</b>	Cycle through the buttons on the Task Bar

## 2.4 SETUP PIN NUMBER

1. Access the **Configuration Utility** (instructions are on [page 2-2](#)).
2. Select the **General** tab.
3. In the **CONFIG PIN** field ([Figure 2-6](#)), enter a PIN number – 1 digit min. 5 digits max. (The default PIN number is 0000.)

The screenshot displays the 'Smart Kiosk Configuration' window with the 'General' tab selected. The interface includes several configuration fields and buttons. A black arrow points to the 'Config PIN' field, which is currently empty and has a placeholder of four dots. Another black arrow points to the 'Save Changes' button at the bottom left. A third black arrow points to the 'Done' button at the bottom right. The 'Config PIN' field is described as 'PIN used to access the configuration screen.' The 'Family Link PIN' field is described as 'PIN used to access the Family Link screen.'

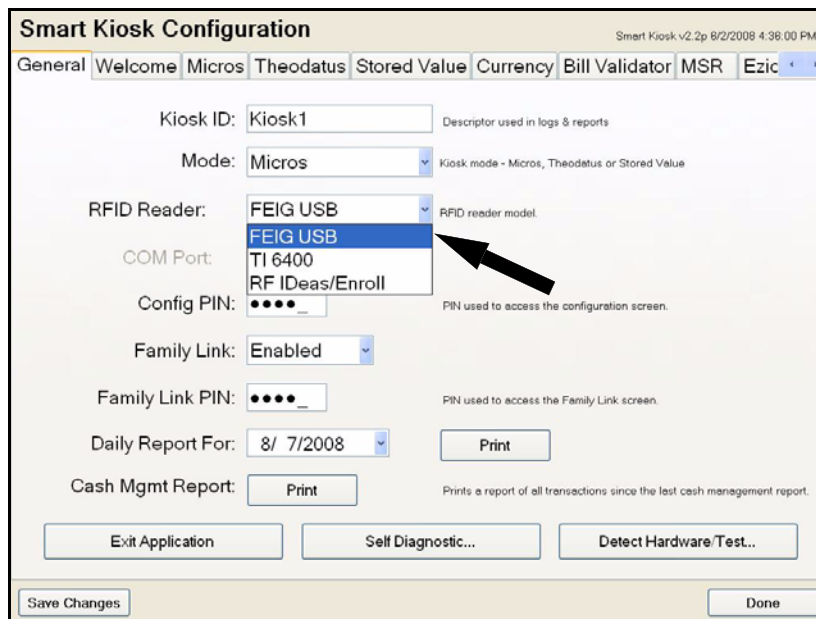
**Figure 2-6. Setup PIN Number, Configuration Screen**

4. Press **SAVE CHANGES**.
5. Press **OK** when the “**Configuration Changes Updated**” message is displayed.
6. Proceed to the next configuration item or press **DONE** to return to the user interface.

## 2.5 CONFIGURE THE RFID READER/WRITER

The RFID Reader/Writer is used to read account information and/or write “stored value” on the RFID wristbands. Follow the procedure below to configure this device.

1. Access the **Configuration Utility** (instructions are on [page 2-2](#)).
2. Select the **General** tab.
3. Select **FEIG USB** reader from **RFID Reader** dropdown list ([Figure 2-7](#)).



The image shows the 'Smart Kiosk Configuration' window. The 'General' tab is selected. The 'RFID Reader' dropdown menu is open, showing three options: 'FEIG USB' (highlighted), 'TI 6400', and 'RF IDEas/Enroll'. A black arrow points to the 'FEIG USB' option. Other fields include 'Kiosk ID' (Kiosk1), 'Mode' (Micros), 'COM Port' (TI 6400), 'Config PIN' (four dots), 'Family Link' (Enabled), 'Family Link PIN' (four dots), 'Daily Report For' (8/ 7/2008), and 'Cash Mgmt Report' (Print). Buttons at the bottom include 'Exit Application', 'Self Diagnostic...', 'Detect Hardware/Test...', 'Save Changes', and 'Done'.

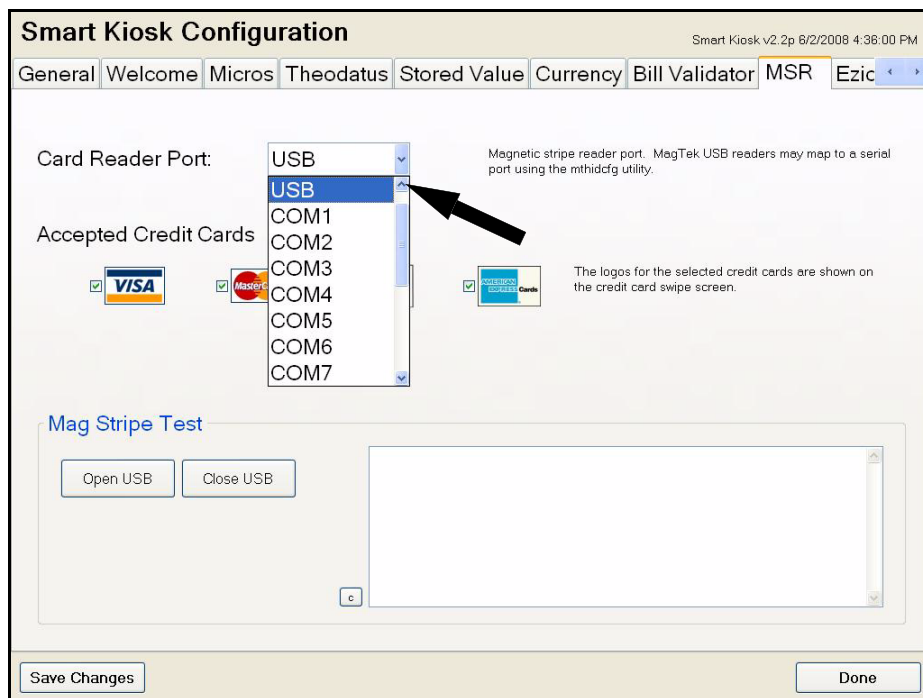
**Figure 2-7. Select RFID Reader, Configuration Screen**

4. Press **SAVE CHANGES**.
5. Press **OK** when the “**Configuration Changes Updated**” message is displayed.
6. Proceed to the next configuration item or press **DONE** to return to the user interface.

## 2.6 CONFIGURE THE MAGNETIC STRIPE READER (MSR)

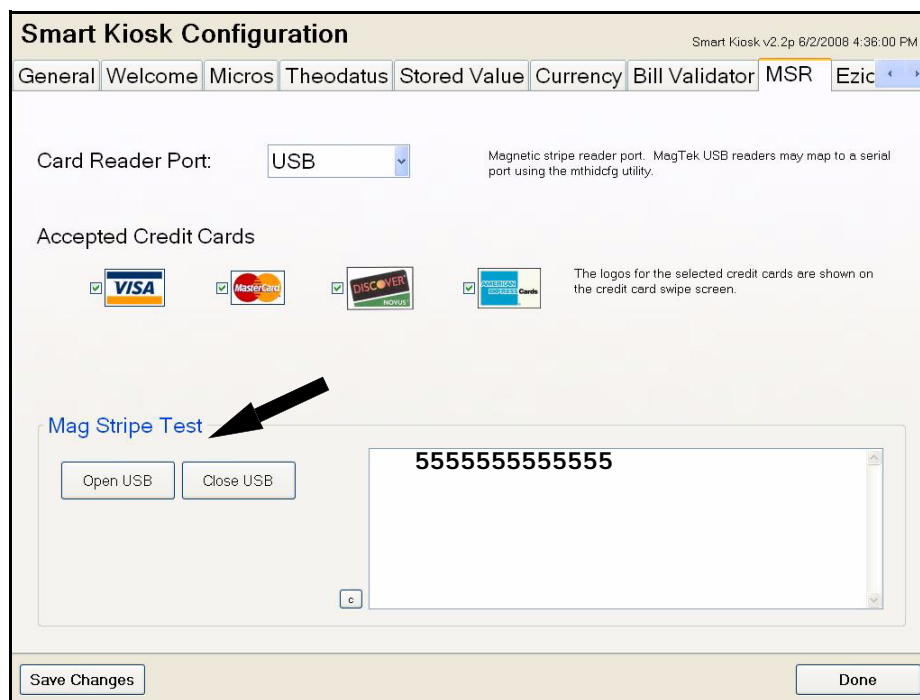
Monetary value can be loaded to an account or RFID wristbands by swiping a debit or credit card in the Magnetic Stripe Reader (MSR). Follow the procedure below to configure the COM port and credit card acceptance modes for the MSR.

1. Access the **Configuration Utility** (instructions are on [page 2-2](#)).
2. Select the **MSR** tab.
3. Select **USB** from the **Card Reader Port** dropdown list ([Figure 2-8](#)).



**Figure 2-8. Select Card Reader Port, MSR Tab**

4. Select the credit cards the kiosk will accept as payment (see [Figure 2-9 on page 2-8](#)). Credit card options differ depending on company setup.



**Figure 2–9. Select Credit Cards to Accept, MSR Tab**

5. Press **OPEN USB** and swipe a credit or debit card. The card number should appear in the window. If the card cannot be read, refer to [Table 4–1, “Troubleshooting Issues and Corrective Action,”](#) on page 4-1.



**NOTE:** CARD SWIPING: When swiping a credit or debit card, the MSR’s LED will turn OFF *temporarily*. (The LED is located on the MSR’s control board.) If the card is successfully decoded, the LED will turn GREEN. If there are decoding errors, the LED will turn RED for approximately *two seconds* to indicate that an error occurred and then turn GREEN.

6. Press **CLOSE USB** to complete MSR testing.
7. Press **SAVE CHANGES**.
8. Press **OK** when the “**Configuration Changes Updated**” message is displayed.
9. Proceed to the next configuration item or press **DONE** to return to the user interface.

## 2.7 CONFIGURE THE BILL VALIDATOR

Monetary value can be loaded to an account or RFID wristband by inserting cash in the Bill Validator. Follow the procedure below to configure the COM port and bill acceptance mode for the Bill Validator.

1. Access the **Configuration Utility** (instructions are on [page 2-2](#)).
2. Select the **Bill Validator** tab.
3. Select COM port number from the **COM Port** dropdown list ([Figure 2–10](#)). (Refer to “[How to Identify Virtual COM Ports using Device Manager](#)” on [page 2-10](#)).

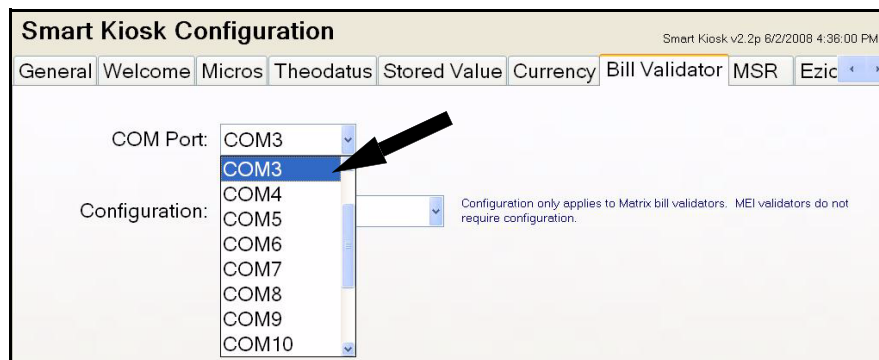


Figure 2–10. Bill Validator Tab, Configuration Screen

4. Select **U.S. ONLY** or **U.S. + CANADIAN** from the **Configuration** dropdown list ([Figure 2–11](#)).

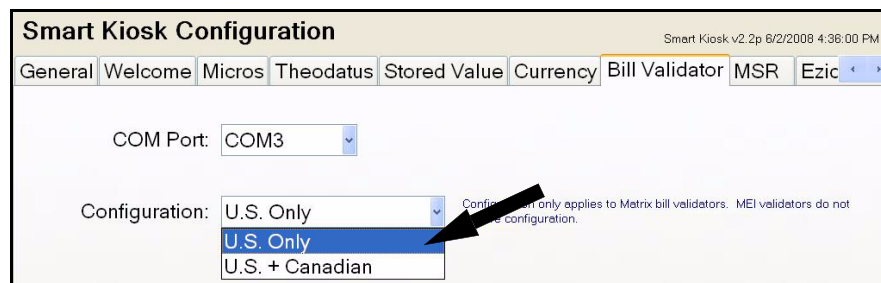


Figure 2–11. Configure Bill Acceptance, Bill Validator Tab

5. Press **SAVE CHANGES**.
6. Press **OK** when the “**Configuration Changes Updated**” message is displayed.
7. Proceed to the next configuration item or press **DONE** to return to the user interface.

## 2.7.1 How to Identify Virtual COM Ports using Device Manager

1. Open the **Device Manager** in Windows:
  - a. On the Window's desktop, right-click **MY COMPUTER** (Figure 2–12).
  - b. Click **PROPERTIES**.

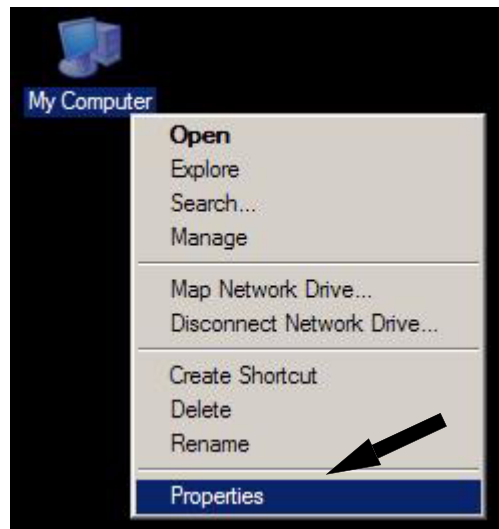


Figure 2–12. Windows Desktop: My Computer>Properties

- c. Select the **Hardware** tab on the **Systems Properties** dialog box (Figure 2–13).
  - d. Click **DEVICE MANAGER**.

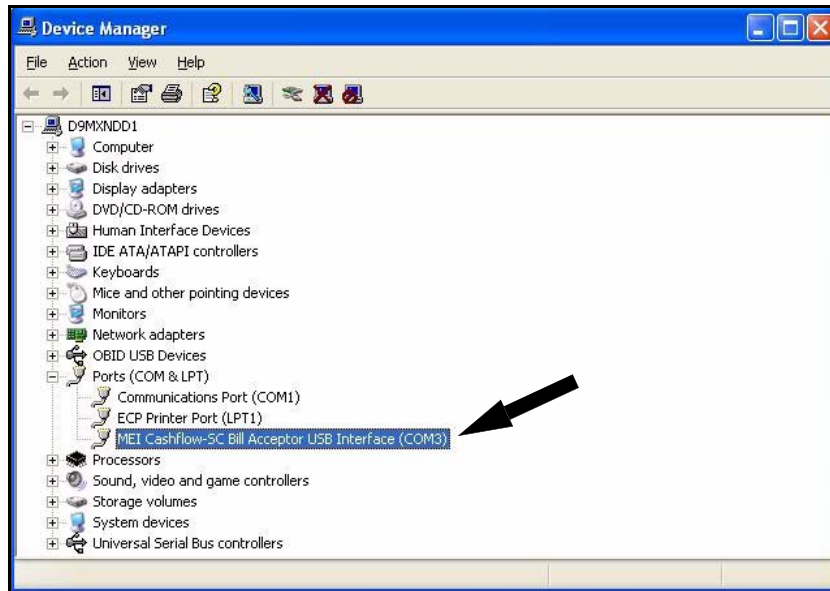


Figure 2–13. Windows Desktop: System Properties>Device Manager

2. Locate the **Ports (COM and LPT)** line.



3. Click on the plus (+) sign to expand lists. (Figure 2–14)
4. Locate the device in the list and write down the port number listed (COMx), where x is the number of the port.
  - For Bill Validator locate the line **MEI: Cashflow-SC Bill Acceptor USB Interface (COMx)**.

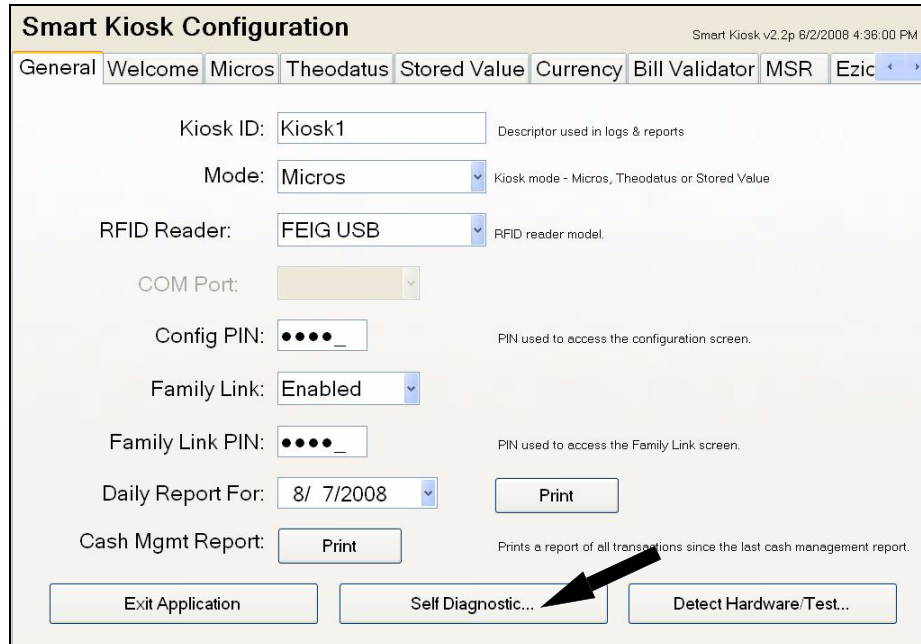


**Figure 2–14. Windows XP: Device Manager, COM Ports**

5. If you are configuring a port for a device in the kiosk's **Configuration Utility**, enter the port number you obtained from the **Device Manager**.

## 2.8 PERFORM A SELF DIAGNOSTIC TEST

1. Access the **Configuration Utility** (instructions are on [page 2-2](#)).
2. Select the **General** tab.
3. Press **SELF DIAGNOSTIC** ([Figure 2-15](#)).



**Smart Kiosk Configuration** Smart Kiosk v2.2p 6/2/2008 4:36:00 PM

General Welcome Micros Theodatus Stored Value Currency Bill Validator MSR Ezic

Kiosk ID:  Descriptor used in logs & reports

Mode:  Kiosk mode - Micros, Theodatus or Stored Value

RFID Reader:  RFID reader model.

COM Port:

Config PIN:  PIN used to access the configuration screen.

Family Link:  PIN used to access the Family Link screen.

Family Link PIN:

Daily Report For:

Cash Mgmt Report:  Prints a report of all transactions since the last cash management report.

**Figure 2-15. Self Diagnostic, General Tab**

4. The **PDC Smart® Kiosk** diagnostic screen displays ([Figure 2-16 on page 2-13](#)).
5. Diagnostics run on the following items. A green checkmark indicates the item is working properly while a red X indicates an error.
  - RFID Reader
  - Bill Validator
  - Magnetic Stripe Reader
  - POS Connection (the POS system listed depends on kiosk configuration)

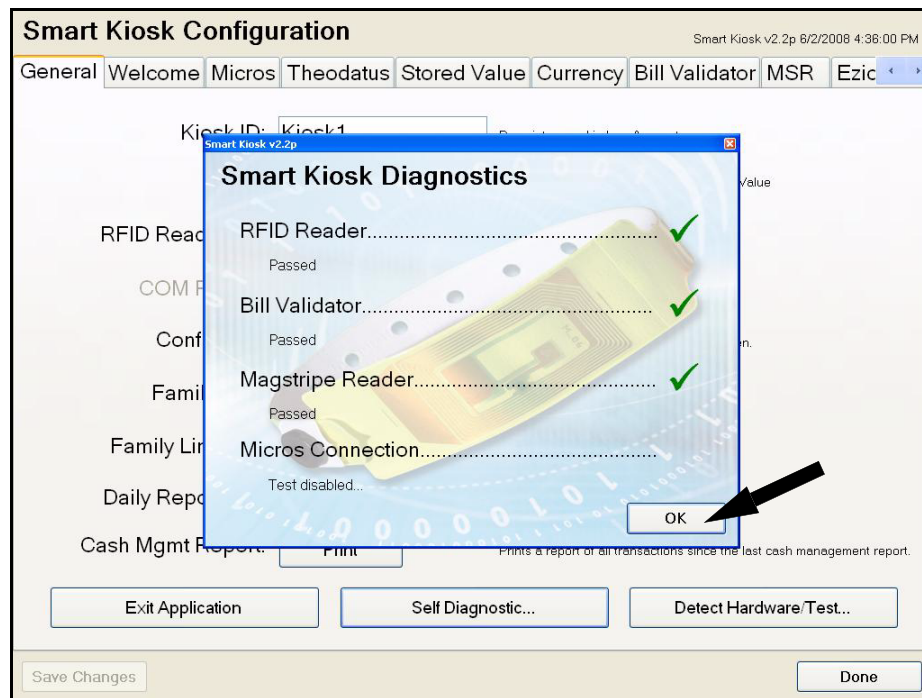
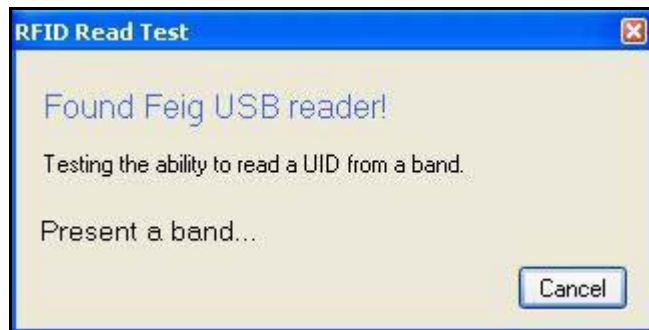


Figure 2–16. Smart Kiosk Diagnostics Screen

6. Press **OK**.
7. If any component fails the diagnostics:
  - Check that component's computer and power connections.
  - For issues with the POS system, check the network connection.
  - If required, refer to the troubleshooting section of this manual for additional corrective actions.
  - Rerun diagnostics once the issue has been corrected.

8. Perform **RFID Read Test**.
  - a. The **RFID Read Test** dialog box displays (Figure 2–17).



**Figure 2–17. RFID Read Test Dialog Box**

- b. Place wristband against the **Place Wristband Here** sign on door (Figure 2–18).



**Figure 2–18. Read RFID Wristband**

- c. The band's **UID** number displays (Figure 2–19).



**Figure 2–19. RFID Read Test, Test Result**

9. Perform **MSR Test**.
  - a. The **Magnetic Card Swipe Test** dialog box displays (Figure 2–20).



**Figure 2–20. Magnetic Card Swipe Test Dialog Box**

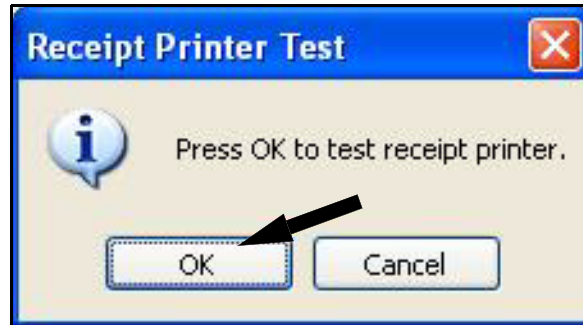
- b. Swipe a debit card or credit card in the MSR.
  - c. The MSR decodes the card information and displays the card number (Figure 2–21).



**Figure 2–21. Magnetic Card Swipe Test Results**

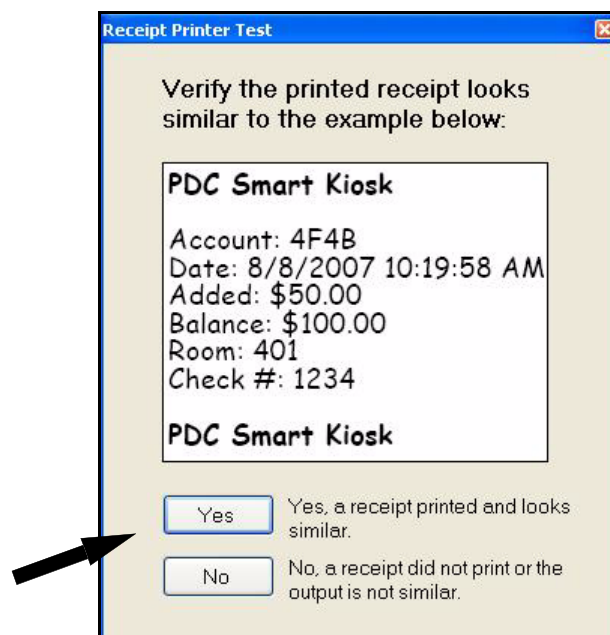
10. Perform **Receipt Printer Test**.

- a. Press **OK** on the **Receipt Printer Test** dialog box (Figure 2–22).



**Figure 2–22. Receipt Printer Test Dialog Box**

- b. Check the receipt printout against the example shown on-screen (Figure 2–23).

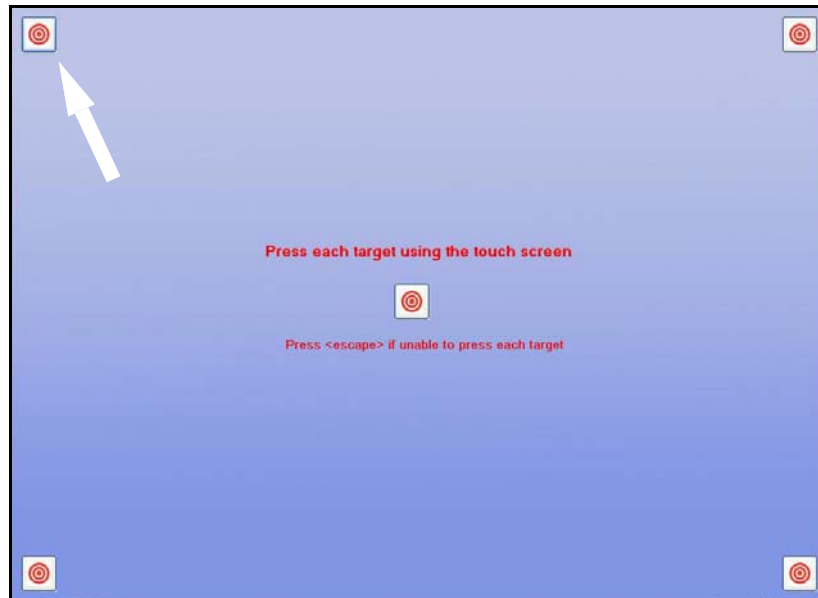


**Figure 2–23. Receipt Example – Onscreen**

- Press **YES** if the receipt printed correctly.
- Press **NO** if the receipt did not print correctly. Repeat the print test.

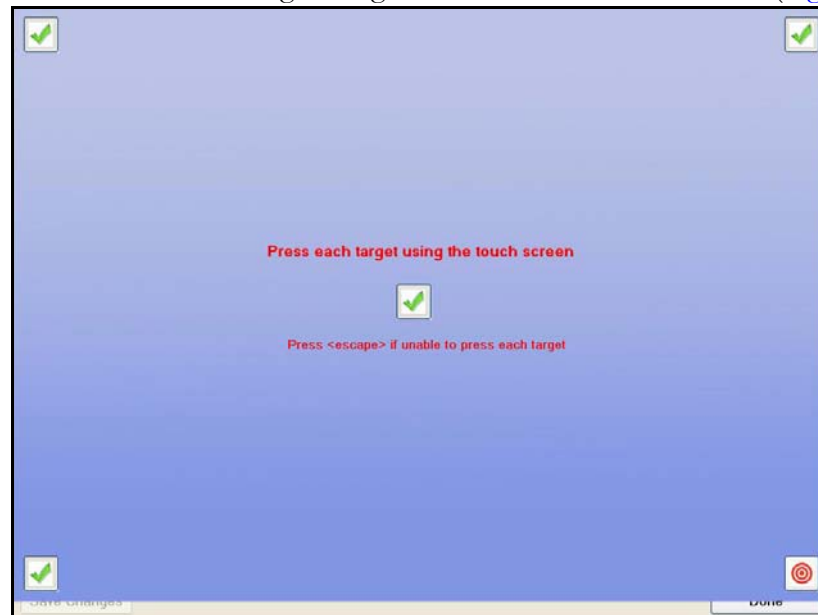
11. Perform **Touchscreen Test**.

- a. Press the bulls eye icon in each corner and in the center of the screen (Figure 2–24).



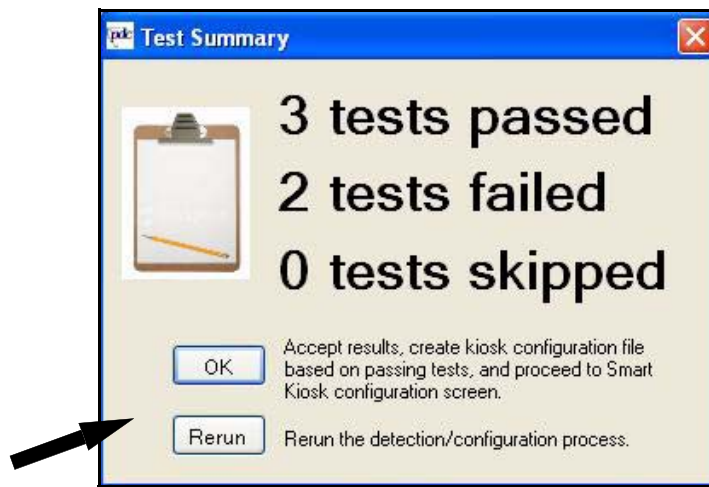
**Figure 2–24. Touchscreen Test Screen with Bulls Eye Icons**

- b. Each icon should change to a green checkmark when touched (Figure 2–25).



**Figure 2–25. Touchscreen Test Screen with Green Check Marks**

12. The **Test Summary** displays (Figure 2–26).



**Figure 2–26. Test Summary Screen**

13. Press **OK** if all hardware components passed.

14. If any component failed the hardware test:

- Check the component's computer and power connections and repeat the test.
- If required, refer to the troubleshooting section of this manual for additional corrective actions.



# SECTION 3

## MAINTENANCE

### 3.1 PREVENTIVE MAINTENANCE

To maintain optimum kiosk operation, [Table 3–2, “Scheduled Preventive Maintenance,” on page 3-2](#) lists the recommended preventive maintenance tasks. [Table 3–1](#) lists the recommended tools and consumable materials needed to perform these tasks. For the available repair or replacement procedures, refer to [“User Serviceable Components” on page 3-4](#).



**NOTE:** Only qualified personnel should perform maintenance on the kiosk hardware. Read and heed all signs (warnings, cautions, and notes) on equipment. Follow all the safety and care precautions provided in the [Safety](#) section of this manual.

**Table 3–1. Tools and Consumable Materials**

Item	Application
Phillips Screwdriver PH #1 / 80mm	General maintenance and repair.
Socket Set	General maintenance and repair.
Wet or dry shop vacuum cleaner or broom	General cleaning and maintenance.
Cloth, soft cotton (lint-free for lenses)	General cleaning/dusting of equipment.
Cotton Swab	Cleaning receipt printer components.
General purpose cleaner and spray dispenser <ul style="list-style-type: none"> <li>– DO NOT use solvents or abrasive cleaners to clean the kiosk surfaces.</li> <li>– DO NOT use petroleum-based products to clean the acceptor module.</li> </ul>	Cleaning exterior surfaces of enclosure and hardware.
Windex	Cleaning touchscreen.
Ethyl or Isopropyl Alcohol	Cleaning receipt printer components.
Vaseline	Lubricate presenter rollers on the receipt printer.

**Table 3–2. Scheduled Preventive Maintenance (Sheet 1 of 2)**

Task	SCHEDULE		Procedures/Cautions/Notes
	WEEKLY	OTHER	
Kiosk Enclosure and Touchscreen			
Clean Touchscreen	Weekly	--	<p>Remove fingerprints, smudges, and dirt from touchscreen with a soft lint-free cloth and a commercial window cleaner such as Windex. DO NOT USE Windex on the kiosk enclosure surfaces.</p> <p><b>CAUTION:</b></p> <ul style="list-style-type: none"><li>For safety cautions and care information, refer to <a href="#">“Touchscreen Safety and Care” on page S-4 (Safety section)</a>.</li></ul>
Clean Kiosk Housing Interior/Exterior	Weekly	--	<ul style="list-style-type: none"><li>Vacuum dust and debris from inside the enclosure.</li><li>Remove receipts that may have fallen to the bottom of the enclosure.</li><li>Remove dust, dirt, or grime from the interior/exterior surfaces and mechanical surfaces. Use a soft, lint-free cloth moistened with a mild detergent and water.</li></ul> <p><b>CAUTION:</b></p> <ul style="list-style-type: none"><li>For safety cautions and care information, refer to <a href="#">“Kiosk Care and Safety” on page S-1 (Safety section)</a>.</li></ul>
Clean Kiosk Fan	--	As Required	<p>Remove accumulated dust with a vacuum or a small soft brush. Remove guard and clean it and the blades with a soft damp cloth and mild detergent. If dust from the fan falls on the kiosk hardware, refer to “Clean Kiosk Enclosure” in this table.</p> <p><b>CAUTION:</b></p> <ul style="list-style-type: none"><li>For safety cautions and care information, refer to <a href="#">“Kiosk Care and Safety” on page S-1 (Safety section)</a>.</li></ul>
Bill Validator, RFID Reader/Writer, MSR			
Clean the Bill Validator’s Acceptor Module	--	2 years	<p>Clean bill path every 2 years or when units acceptance rate drops below normal. See <a href="#">“Clean the Acceptor Module” on page 3-14</a>.</p> <p><b>CAUTION:</b></p> <p>For safety cautions and care information, refer to <a href="#">“Bill Validator Safety and Care” on page S-3 (Safety section)</a>.</p>

Table 3–2. Scheduled Preventive Maintenance (Sheet 2 of 2)

Task	SCHEDULE		Procedures/Cautions/Notes
	WEEKLY	OTHER	
Clean MSR Reader	--	<b>As Required</b>	If the shield covering the MSR Reader requires cleaning, use a soft, dry cloth to remove dirt/dust.
Clean RFID Reader/Writer and Its Compartment	--	<b>As Required</b>	If the RFID Reader or its compartment require cleaning, use a soft cloth dampened with water and a mild detergent. DO NOT saturate device.
<b>Receipt Printer</b>			
<b>CAUTIONS:</b>	Before cleaning the receipt printer, refer to <a href="#">“Receipt Printer Safety and Care” on page S-3 (Safety section)</a> .		
Clean Paper Path and Presenter Rollers	--	<b>If paper is not feeding properly, or when servicing printer.</b>	Clean paper path and presenter rollers, and lubricate presenter rollers. Refer to <a href="#">“Clean Receipt Printer’s Paper Path and Presenter Rollers” on page 3-6</a> .
Clean Print Head	--	<b>Printing is faint</b>	Clean heat elements on the print head if the print on the receipts is faint. See <a href="#">“Clean the Print Head on the Receipt Printer” on page 3-5</a>
Clean Optical Sensors	--	<b>When dust on sensors are causing inconsistent printer operation.</b>	Paper dust accumulated on optical sensors may interfere with printer functions. To clean the sensors, refer to the manufacturer’s service manual for instructions.  Dusty sensors can cause inconsistent cutter operation, the paper to be fed straight through without the required loop, and missing or irregular spots.
Clean or Replace Cutter’s Blade	--	<b>If printer is not cutting paper properly.</b>	If the printer is not cutting receipts properly, dust may have accumulated on the blade, optical sensors, or it needs to be replaced. For blade cleaning and replacement instructions, refer to the manufacturer’s service manual.

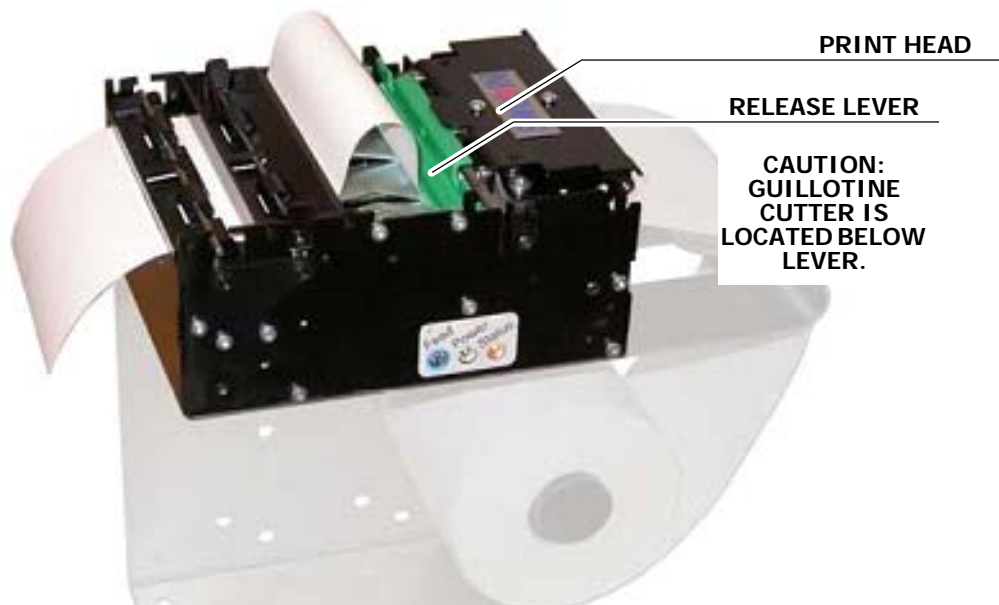
## 3.2 USER SERVICEABLE COMPONENTS

### 3.2.1 Clear Paper Jams in the Receipt Printer



**WARNING:** The receipt printer (Swecoin TTP 2030) has an integrated guillotine cutter below the green release lever. Keep fingers away from the cutter when printer is powered ON.

1. Unplug the printer and wait a few minutes for the print head to cool.
2. Press the green release lever towards the rear of the printer and lift the print head (Figure 3-1 and Figure 3-3 on page 3-6). The paper will fall out the rear of the printer.
3. Remove printed receipts or paper that is jamming the paper path. If required, clean the printer's paper path, presenter rollers and print head.
  - Refer to [“Clean Receipt Printer's Paper Path and Presenter Rollers”](#) on page 3-6.
  - Refer to [“Clean the Print Head on the Receipt Printer”](#) on page 3-5.



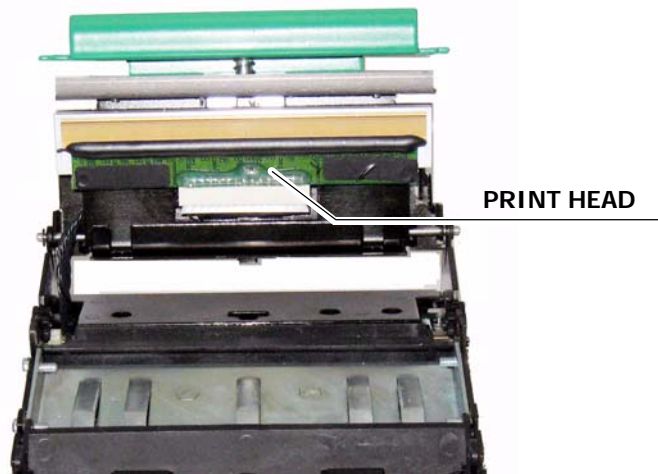
**Figure 3-1. Receipt Printer**

4. Install the receipt paper, refer to [“Install Receipt Paper”](#) on page 1-8.

### 3.2.2 Clean the Print Head on the Receipt Printer

Clean print head if the printed receipts have faint text (make sure it is printing on the thermal side of the paper).

1. Unplug the printer and wait a few minutes for the print head to cool.
2. Press the green release lever towards the rear of the printer and lift the print head ([Figure 3–1 on page 3-4](#) and [Figure 3–2](#)). The paper will fall out the rear of the printer.
3. Clean heat elements with a cotton swab dampened with alcohol (ethyl or isopropyl).  
**Do not saturate print head.**



**Figure 3–2. Receipt Printer's Print Head**

4. Close the print head.
5. Plug in the printer.
6. Install the receipt paper, refer to [“Install Receipt Paper” on page 1-8](#).

### 3.2.3 Clean Receipt Printer's Paper Path and Presenter Rollers

If there are excessive paper jams or the receipts are not being fed properly to the front of the printer, clean the printer's paper path and presenter rollers removing paper dust and dirt. (The printer does not have to be removed for cleaning. If you decide to remove the printer, refer to [“Remove/Install the Receipt Printer” on page 3-9.](#))

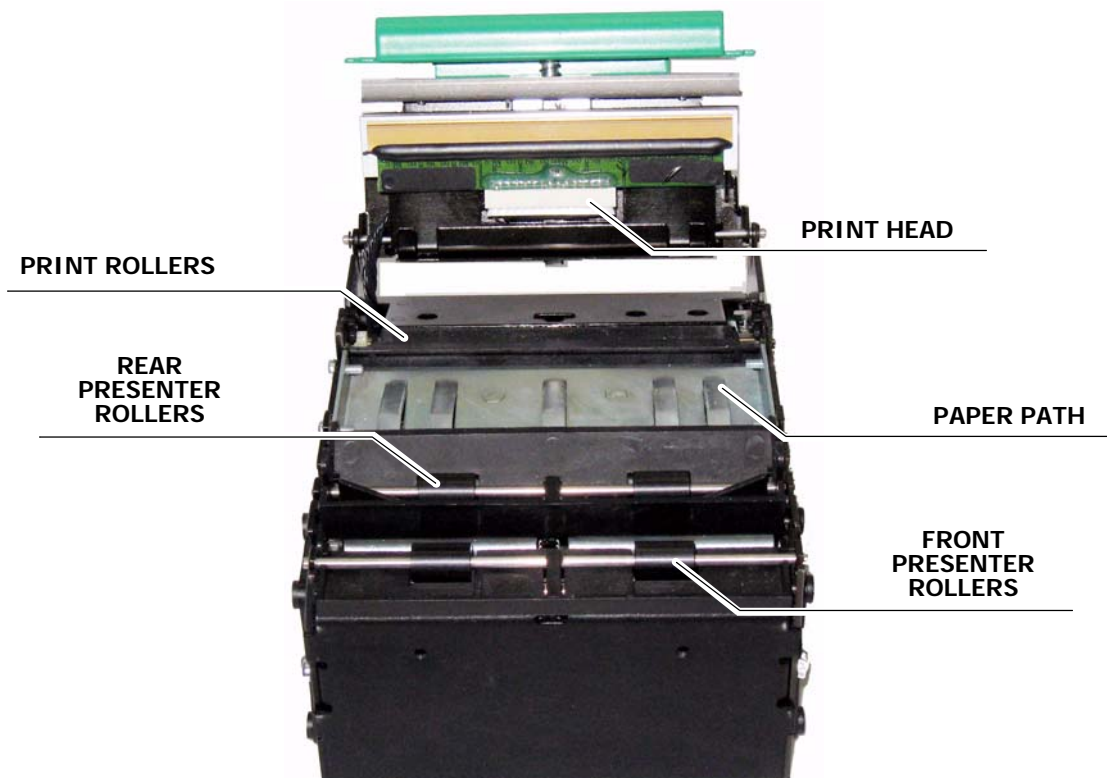


---

**CAUTION:** DO NOT clean presenter rollers or paper path with printer powered ON. Always turn off printer by disconnecting the power cable from the surge protector.

---

1. Unplug the printer and wait a few minutes for the print head to cool.
2. Press the green release lever towards the rear of the printer and lift the print head ([Figure 3-1 on page 3-4](#) and [Figure 3-3](#)). The paper will fall out the rear of the printer.



**Figure 3-3. Receipt Printer, Full View**

3. Remove the rear roller guide. Press its side tabs inwards and lift up (Figure 3–4).



**Figure 3–4. Remove Rear Roller Guide from Receipt Printer**

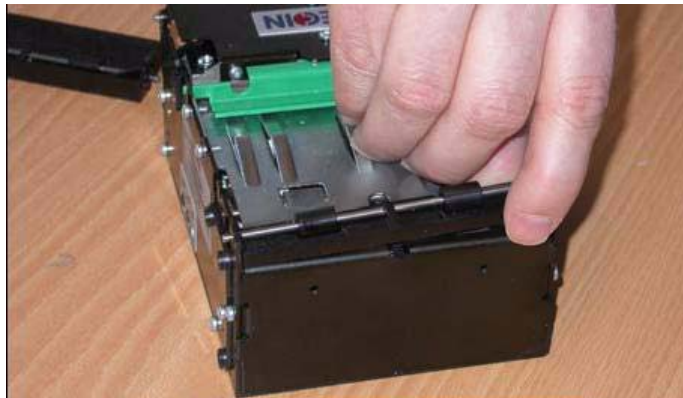
4. Remove the front roller guide. Gently lift up each side of the guide, disconnecting its forks from the printer's rotating shaft (Figure 3–5).



---

**CAUTION:** Pull lightly on the roller guide or you will break the plastic forks that hold the part to the rotating shaft.

---



**Figure 3–5. Remove Front Roller Guide from Receipt Printer**

5. Clean the print path clean with a soft, lint-free cloth and isopropyl alcohol.
6. Clean the presenter roller guide with a cotton swab and isopropyl alcohol.

7. On the printer, clean the front printer roller with cotton swabs and isopropyl alcohol. (This roller is located below the front roller guide's position on the printer.)
8. On the printer, clean the rear printer roller with cotton swabs and isopropyl alcohol. (This roller is located near the back of the printer below the print head.)
9. For the front and rear presenter guides, use Vaseline to lightly lubricate the sides of the black rollers where the shaft enters the hole in the rollers.



---

**CAUTION:** DO NOT lubricate the grooves and forks on the presenter roller guides. Lubrication on the grooves and forks could cause the retract function of the printer to fail.

---

10. Install the front roller guide:
  - a. Engage the guide's forks with the grooves in the shaft on the printer.
  - b. Press down on each side of guide to seat guide
11. Install the rear roller guide directly behind the front roller guide.
  - a. Press down on each side of the guide to lock it in place.
  - b. Check that the guide is properly installed by **very lightly** pulling on the guide; it should stay connected to the printer. (If the guide is easily removed, reinstall the guide.)
12. Plug in the printer.
13. Install the receipt paper, refer to [“Install Receipt Paper” on page 1-8](#).
14. Printer is ready for use. (If you removed the printer for cleaning, refer to [“Remove/Install the Receipt Printer” on page 3-9](#) for instructions on reinstalling the printer.)



### 3.2.4 Remove/Install the Receipt Printer

#### Remove Receipt Printer

1. Unplug the printer and wait a few minutes for the print head to cool.
2. Press the green release lever towards the rear of the printer and lift print head (Figure 3-3 on page 3-6). The paper will fall out the rear of the printer.
3. Remove the paper roll and set aside for reuse (Figure 3-6).

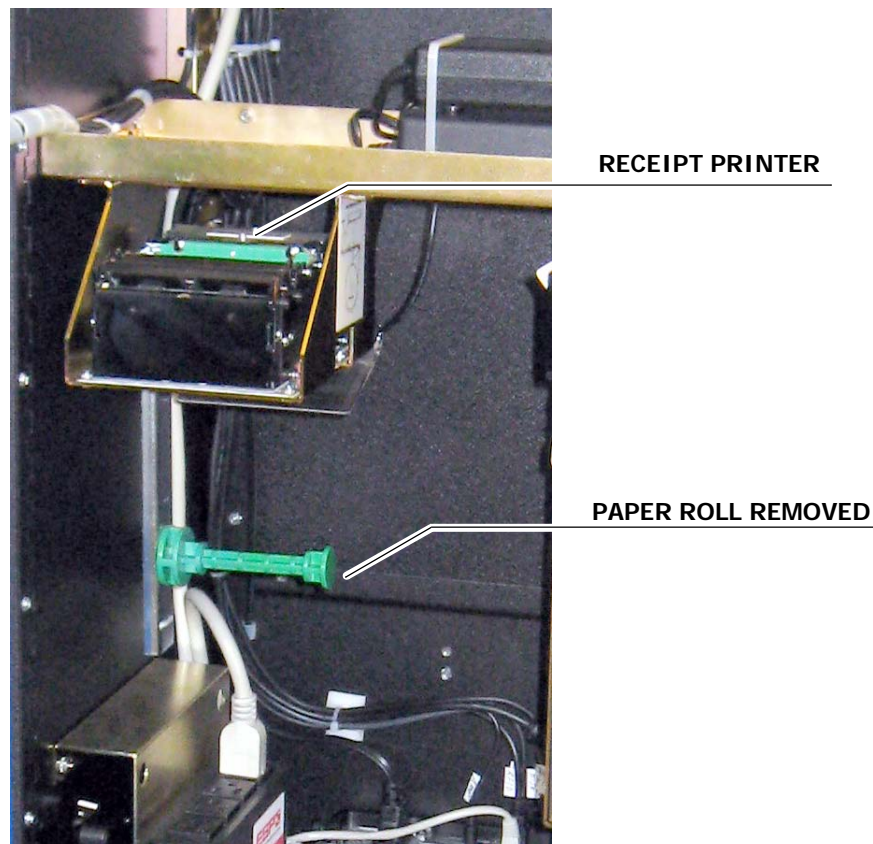
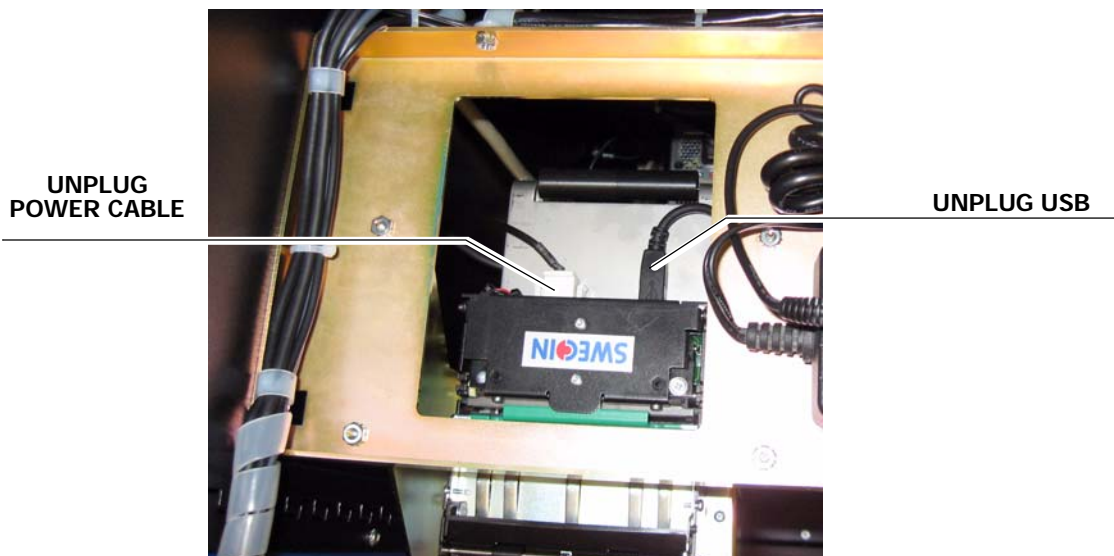


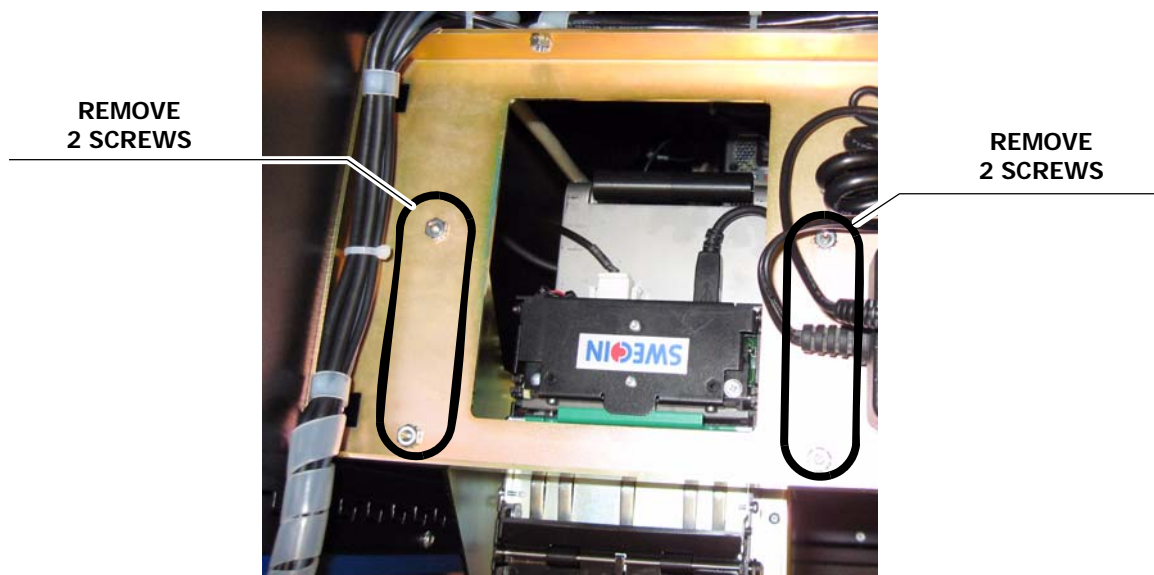
Figure 3-6. Receipt Printer without Paper Roll

4. Unplug the power cable and network cable from the rear of the printer (Figure 3–7).



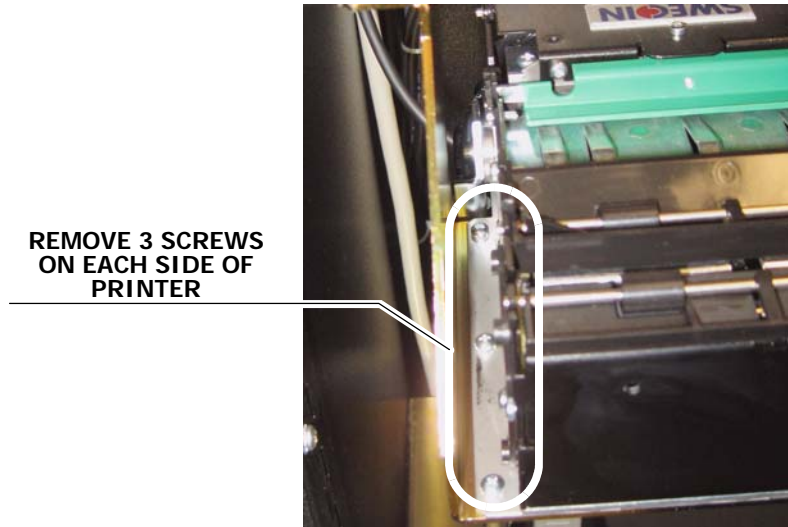
**Figure 3–7. Receipt Printer, Power Cable and USB Cable**

5. Separate the printer's support frame from the upper support frame in the kiosk by removing the four screws shown in Figure 3–8. DO NOT allow the printer's support frame to fall when removing the screws.



**Figure 3–8. Receipt Printer, Printer Support Frame**

6. Remove the printer and its support frame from the kiosk.
7. Separate the printer from its support frame by removing the six screws securing the printer; three screws on each side of printer ([Figure 3–9](#)).



**Figure 3–9. Receipt Printer, Secured to Printer Support Frame**

### **Install Printer**

8. Secure the receipt printer to its support frame using the six screws that were previously removed.
9. Secure the receipt printer's support frame to the top support frame in the kiosk using the four screws that were previously removed.
10. At the rear of the printer, attach the power cable and network cable.
11. Plug in power cable.
12. If required turn on the PC computer, Windows XP will automatically see the printer (the driver should already be installed).
13. Install paper, refer to [“Install Receipt Paper”](#) on page 1-8.

### 3.2.5 Remove/Insert the Acceptor Module

The Bill Validator consists of three major components: the acceptor module for bill acceptance, the cashbox for secure cash storage, and the chassis. This procedure provides instructions on removing and reinserting the acceptor module.



---

**NOTE:** The Acceptor Module is hot swappable, which means the unit can be removed without disconnecting the module from power.

---

#### Remove Acceptor Module

1. Hold the front of the acceptor module and use your thumb to lift the yellow release lever connecting the module to the chassis ([Figure 3–10 on page 3-13](#)).
2. Pull acceptor module up and away from the chassis. [Figure 3–10 on page 3-13](#) shows how to remove and reinsert the module. (An instruction label is also located on the module's yellow cap.)
3. To clean the bill path, refer to [“Clean the Acceptor Module” on page 3-14](#).

#### Insert Acceptor Module

4. To reinsert the acceptor module, hold module by the front then insert the rear of the module into the chassis ([Figure 3–10 on page 3-13](#)).
5. The acceptor module is fully inserted when the yellow release lever locks into place ([Figure 3–10 on page 3-13](#)).
6. After a few seconds, you should hear the module reconnect to the cashbox.



**Figure 3–10. Acceptor Module, Remove and Reinsert**

### 3.2.6 Clean the Acceptor Module

If the Bill Validator's acceptor module is having problems accepting bills or the bill path is due for cleaning (every 2 years) follow the cleaning procedure below.



**NOTE:** The Bill Validator's acceptor module is hot swappable; the module can be removed without powering off the unit.

1. Remove acceptor module, refer to [“Remove/Insert the Acceptor Module”](#) on page 3-12.
2. Squeeze the module's yellow cap toward the front of the device ([Figure 3-11](#)).
3. Lift the yellow cap to open the module's mouth ([Figure 3-11](#)).



**SQUEEZE YELLOW CAP  
TOWARD FRONT OF DEVICE**



**LIFT TO OPEN MOUTH**

**Figure 3-11. Acceptor Module, Open Mouth**

4. Remove money or paper debris from bill path.

5. Clean bill path with a soft lint-free cloth lightly dampened with a cleaning solution (mild detergent and water).



---

**CAUTION:** DO NOT spray cleaner directly on the acceptor module.  
Never use a petroleum-based product to clean this device!  
Petroleum based products will damage the bill path.

---

6. Dry the bill path with a dry lint-free cloth.



---

**NOTE:** When cleaning the bill path, make sure no streaks or residue from the cleaning product remains on the bill path before closing the module's mouth.

---

7. Close the module's mouth.
8. Wipe clean the module's exterior surfaces with the dampened cloth.
9. Dry the modules exterior surfaces with a clean lint-free cloth



---

**CAUTION:** DO NOT get cleaning solution or any liquid on the connection board at the rear of the module. If the connection board is dusty, use a dry lint-free cloth to clean.

---

10. Reinsert module into chassis until the locking mechanism engages. Refer to [“Remove/Insert the Acceptor Module” on page 3-12.](#)



### 3.2.7 Clear Jams in the Acceptor Module

1. Remove acceptor module. For instructions, refer to [“Remove/Insert the Acceptor Module” on page 3-12](#)).
2. Open the module’s mouth by squeezing the yellow cap towards front of unit ([Figure 3–11 on page 3-14](#)).
3. Remove the bill jamming the bill path.
4. If required, clean the bill path. For instructions, refer to [“Clean the Acceptor Module” on page 3-14](#).
5. Reinsert the acceptor module, refer to [“Remove/Insert the Acceptor Module” on page 3-12](#).

### 3.2.8 Clear Jams in Cashbox



---

**NOTE:** The cashbox is hot swappable, which means the unit can be removed without disconnecting the device from power.

---

1. Unlock and open the cashbox enclosure.
2. To remove the cashbox, firmly pull the yellow strap until it releases from chassis ([Figure 3–12](#)). There will be some resistance from the two springs inside the chassis.



**Figure 3–12. Remove Cashbox**



3. If a bill is jammed in the bill path into the cashbox, remove the bill.



**REMOVE MONEY  
JAMMING BILL  
PATH INTO  
CASHBOX**

**Figure 3–13. Remove Cashbox, Remove Jam**

4. If the bill is jammed inside the cashbox, it is probably full. Refer to [“Empty the Cashbox” on page 1-11](#).

### 3.2.9 Remove/Install the RFID Reader/Writer

#### Remove RFID Reader/Writer

1. Remove the four screws securing the clear plastic shield to the door ([Figure 3–14](#)).



**Figure 3–14. RFID Reader, Remove**

2. Remove the four screws securing the clear plastic shield to the reader.
3. Disconnect the USB cable and remove unit from kiosk.

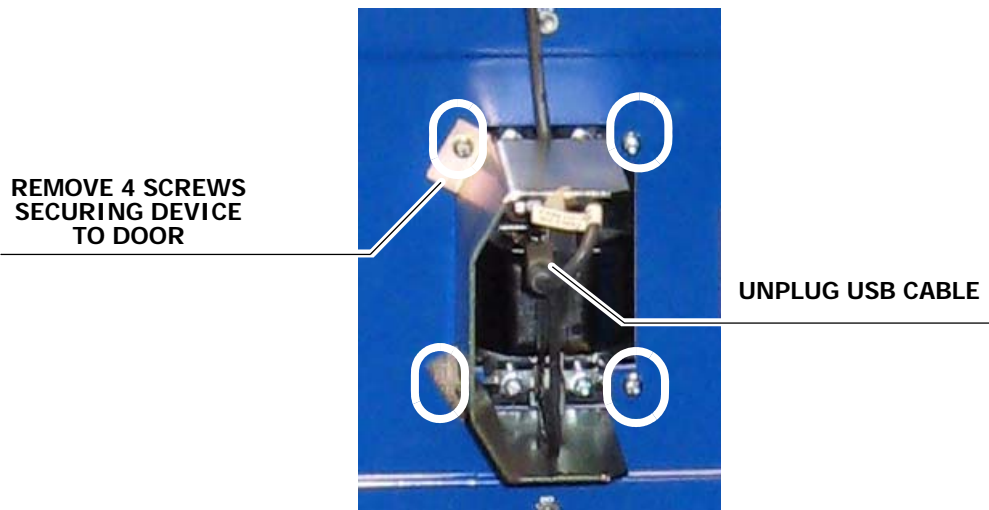
### **Install RFID Reader/Writer**

4. To install the reader, reconnect the USB cable to the back of the reader.
5. Attach the clear plastic shield to the back of the RFID reader with the four screws previously removed.
6. Attach the clear plastic shield to the door with the four screws previously removed.
7. Power ON the computer and Windows XP will automatically see the RFID Reader.
8. If the kiosk needs to be configured for the reader, refer to [“Configure the RFID Reader/Writer” on page 2-6.](#)

### **3.2.10 Remove/Install the Magnetic Stripe Reader (MSR)**

#### **Remove Magnetic Stripe Reader**

1. Disconnect the USB cable from the device ([Figure 3-15](#)).
2. On the left side of the device, remove the two screws securing the protective shield ([Figure 3-15](#)). These screws also connect the faceplate to the front of the kiosk door.



**Figure 3-15. Magnetic Stripe Reader with Shield**

3. On the right side of the MSR, remove the two screws securing the MSR to the kiosk door. (When removing the last screw, do not allow the unit to fall out of the door.)
4. From the front of the kiosk door, pull the MSR out of the cutout.

## **Install Magnetic Stripe Reader**

5. To install the MSR, insert the unit through the cutout in the front of the door.
6. On the right side of the MSR, use two screws to secure the MSR faceplate to the kiosk door. **DO NOT** over tighten the screws.
7. On the left side of the MSR, use two screws to attach the metal shield to the door and secure the faceplate. **DO NOT** over tighten the screws.
8. Reconnect the USB Cable to the back of the MSR.
9. The MSR is plug and play, and the kiosk application will install the ActiveX component to run the device.
10. To configure or test the MSR, refer to [“Configure the Magnetic Stripe Reader \(MSR\)”](#) on page 2-7.

### 3.2.11 Touchscreen Rear Panel Controls

The touchscreen has rear panel controls (Figures 3–16) with several buttons to power on the touchscreen and to control brightness and contrast. The menu button displays the On Screen Display (OSD) menus that are used to adjust sharpness, picture vertical/horizontal positions, etc. Table 3–3 on page 3-21 lists the rear panel control functions. Table 3–4 on page 3-21 lists the screen adjustments which are made from the OSD menus.



**Figure 3–16. Touchscreen, Rear Panel Controls**

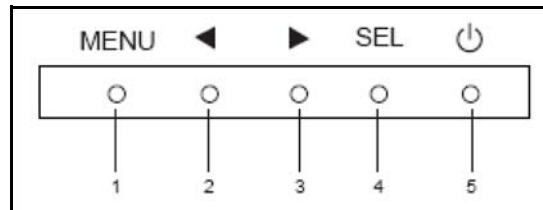


Figure 3–17. Drawing of Touchscreen Rear Control Panel

Table 3–3. Touchscreen Rear Control Panel Options



ITEM	Control	Function
1	Menu (and exit)	Displays/exits the On Screen Display (OSD) menus.
2	Left Arrow 	This button performs three functions. <ul style="list-style-type: none"> <li>• Enter contrast adjustment.</li> <li>• Increase value of the adjustment item.</li> <li>• Select item counter-clockwise.</li> </ul>
3	Right Arrow 	This button performs three functions. <ul style="list-style-type: none"> <li>• Enter brightness adjustment.</li> <li>• Decrease value of the adjustment item.</li> <li>• Select item clockwise.</li> </ul>
4	SEL (Select)	Selects the adjustment items from the OSD menus.
5	Power Switch	Switches the power of the monitor.

Table 3–4. On Screen Display (OSD) Control Options

Control	Description
Contrast	Increases or decreases contrast.
Brightness	Increases or decreases brightness.
V-Position	Moves the screen up or down.
H-Position	Moves the screen left or right.
Recall Defaults	Returns the monitor to its default settings.

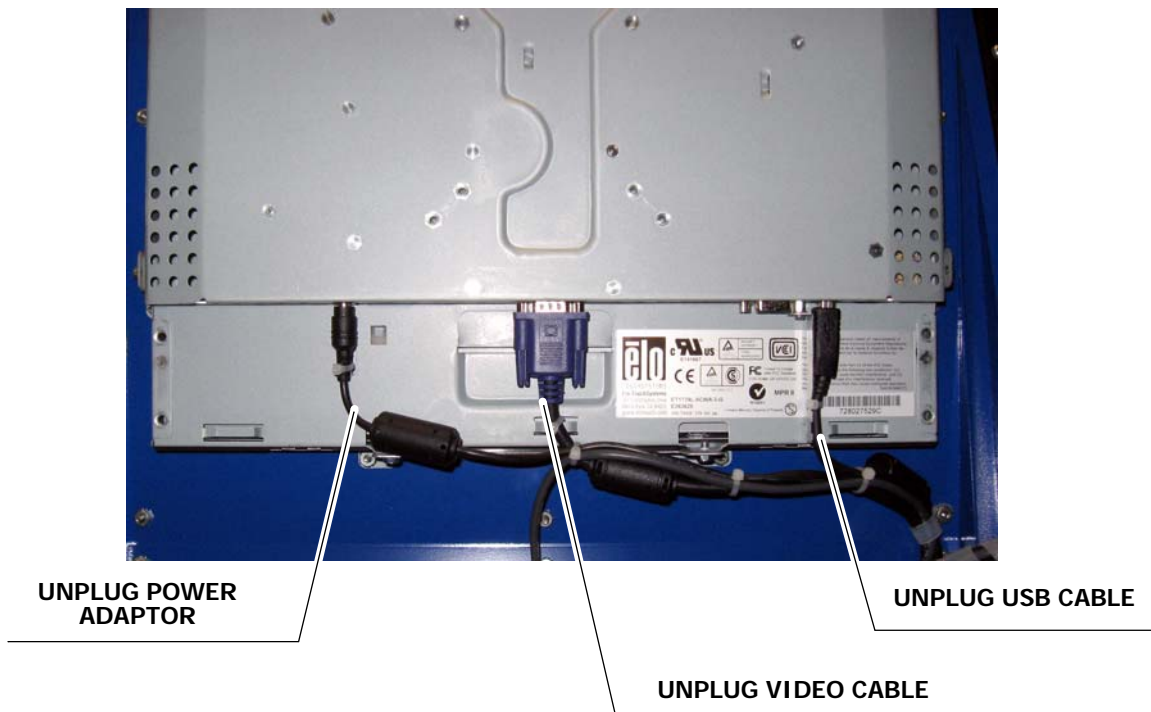
**Table 3–4. On Screen Display (OSD) Control Options**

Control	Description
RGB	Press ◀ or ▶ to select 9300, 6500, 5500, 7500 and USER. (Select USER to make adjustments to the R/G/B content.) To restore the factory default setting, press <b>ENTER</b> .
Exit	Exit the menu.
Sharpness	Adjusts the sharpness.
Phase	Increase/decrease snow noise of the image after auto adjustment is made.
Clock	The dot clock is fine-adjusted after auto adjust.
OSD H-Position	Moves the OSD position horizontally on the screen. Press ▶ to move the OSD menu to the right side of the screen. Press ◀ to move the OSD menu to the left side of the screen.
OSD V-Position	Moves the OSD position vertically on the screen. Press ◀ to move the OSD menu to the top side of the screen. Press ▶ to move the OSD menu to the lower side of the screen
OSD Time	Determines how long (in seconds) the OSD menu waits before closing automatically after no action has been performed.
Auto-Adjust	Press <b>AUTO</b> to enable Auto-Adjust. Will automatically adjust V-Position, H-Position, Clock and Clock-Phase.
OSD Language	Select from English, French, German, Spanish, and Japanese.
Information Description	Indicates the current resolution, H-Frequency and V-Frequency.

### 3.2.12 Remove/Install the Touchscreen

#### Remove the Touchscreen

1. Shutdown the PC computer, refer to [“Shutdown the Kiosk” on page 1-7](#).
2. Power OFF the touchscreen (refer to [Figure 3–17 on page 3-21](#) and [Table 3–3 on page 3-21](#)).
3. Unplug the touchscreen from the surge protector.
4. From rear of touchscreen ([Figure 3–18](#)):
  - Unplug Power Cable
  - Unplug Video Cable
  - Unplug USB Cable

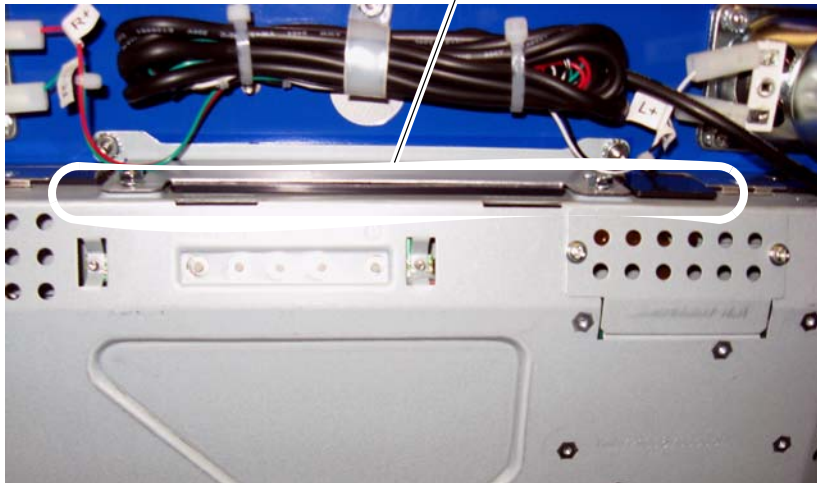


**Figure 3–18. Touchscreen, Rear Panel Controls**



5. Remove the cable ties that secure the amplifier's speaker wires to the top of the touchscreen.
6. The touchscreen is secured to the door by two brackets, one at the top and one at the bottom. Remove the four nuts securing these brackets to the kiosk door ([Figure 3–19](#) and [Figure 3–20](#)). Make sure the touchscreen does not fall.

**REMOVE 2 NUTS SECURING  
TOUCHSCREEN TO DOOR**



**Figure 3–19. Touchscreen, Rear View, Top**



**REMOVE 2 NUTS SECURING  
TOUCHSCREEN TO DOOR**

**Figure 3–20. Touchscreen, Rear View, Bottom**

7. Carefully remove the touchscreen and place it where it cannot be damaged. If the touchscreen is being returned for maintenance, ensure it is properly packed for shipment.

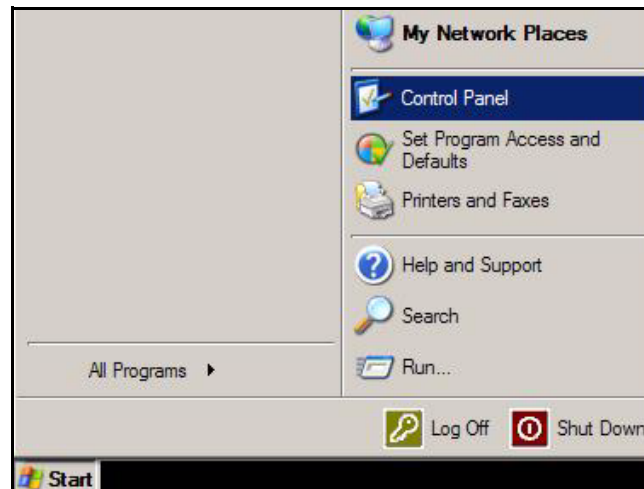


## **Install the Touchscreen**

8. Secure the touchscreen's top and bottom brackets to the kiosk door with the four nuts previously removed ([Figures 3–19 and 3–20 on page 3-24](#)). (Make sure the touchscreen does not fall while installing the screws.) Hand tighten but DO NOT over tighten nuts.
9. Reconnect cables to the back of the touchscreen ([Figure 3–18 on page 3-23](#)). (Organize and secure cables with cable ties.)
  - Reconnect Power Cable
  - Reconnect Video Cable
  - Reconnect USB Cable
10. Power ON the kiosk computer, refer to [“Startup the Kiosk” on page 1-5](#).
11. Power ON the touchscreen ([Figure 3–17 on page 3-21](#)).
12. Windows XP automatically detects the touchscreen. The software and drivers for this touchscreen are already installed.
13. To calibrate the touchscreen, refer to [“Calibrate Touchscreen” on page 3-26](#).

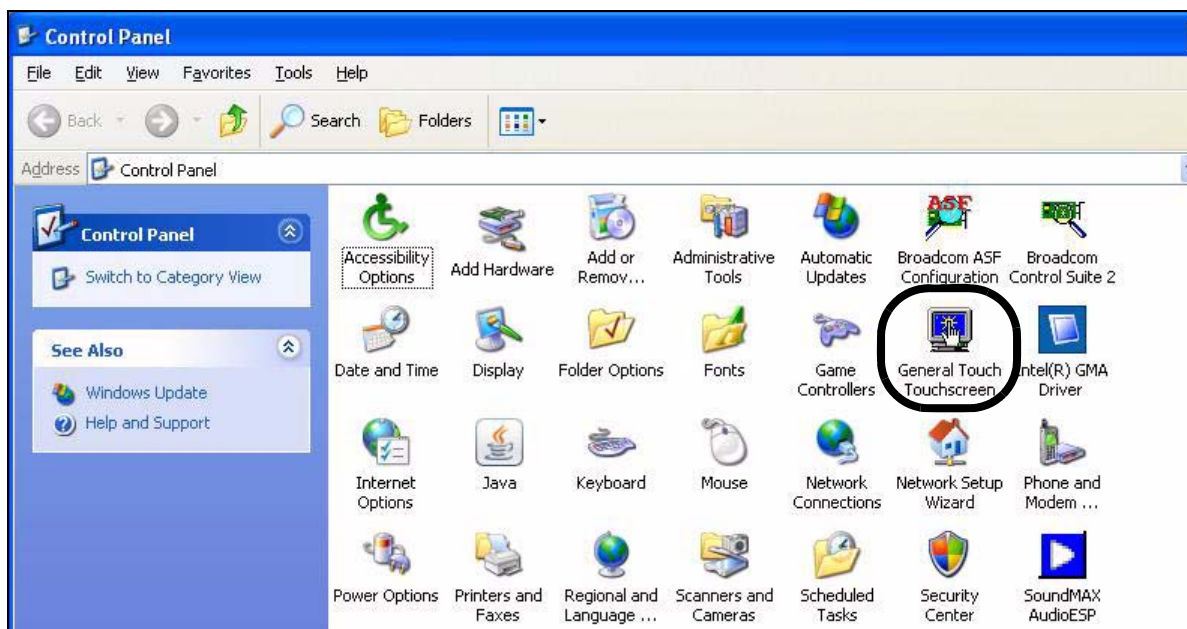
### 3.2.13 Calibrate Touchscreen

1. If the kiosk application is running, exit the program.
  - a. Access the **Configuration Utility** per instructions on [page 2-2 \(Section 2\)](#).
  - b. From the **General** tab, select **EXIT APPLICATION**.
2. From the Window's desktop, select **START>CONTROL PANEL**.



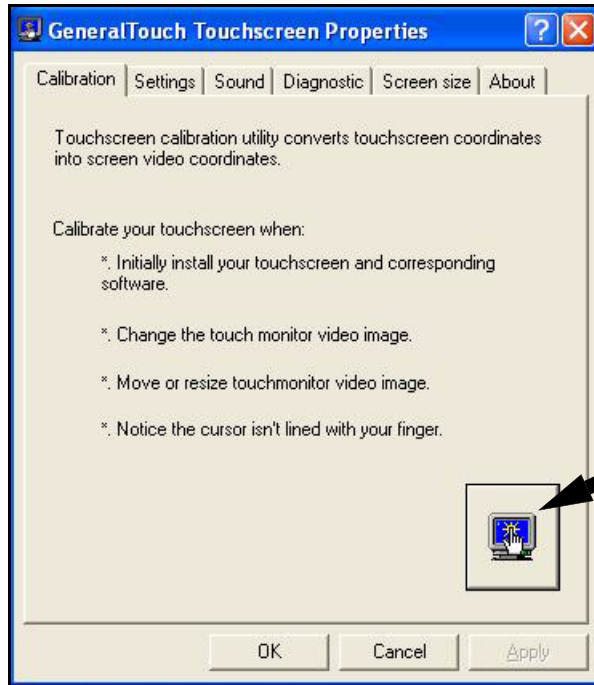
**Figure 3–21. Select Start>Control Panel**

3. Control Panel: Double-click the **GENERAL TOUCHSCREEN** icon.



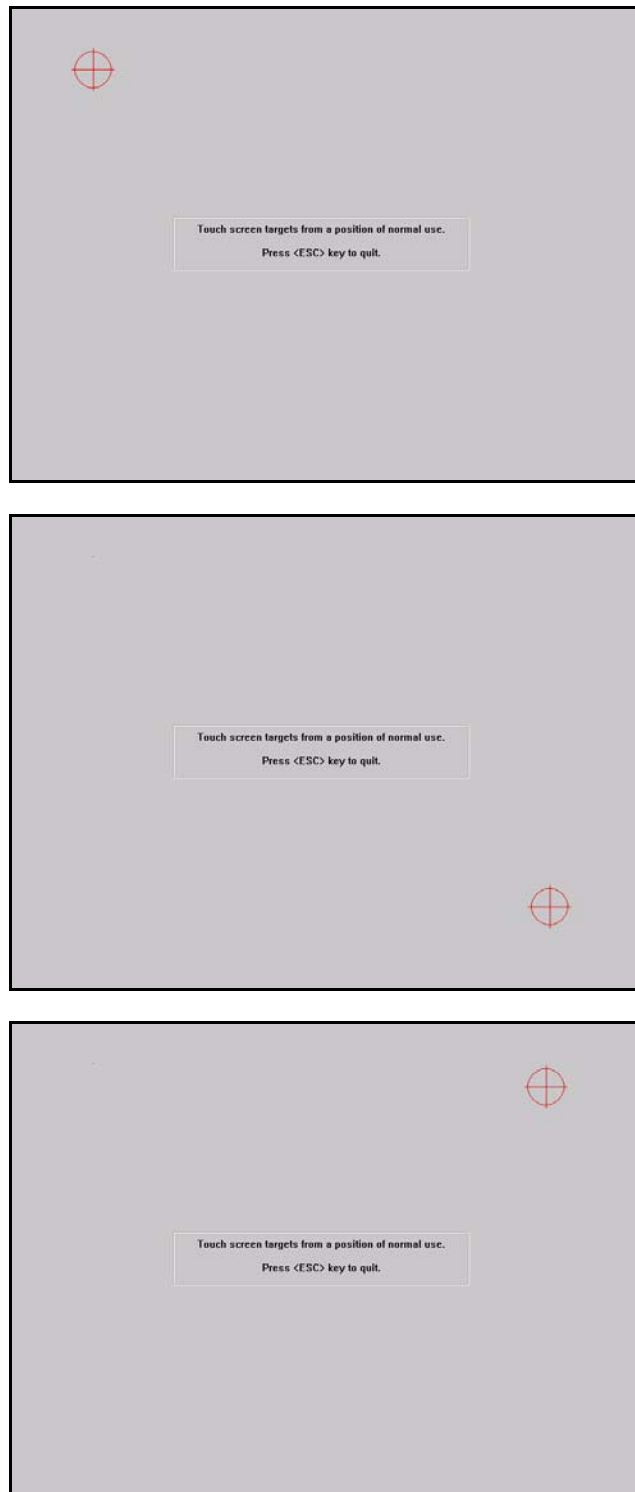
**Figure 3–22. Control Panel>General Touchscreen**

4. The **GeneralTouch Touchscreen Properties** displays (Figure 3–23).
5. Click the **TOUCHSCREEN** icon on the **Calibration** tab.

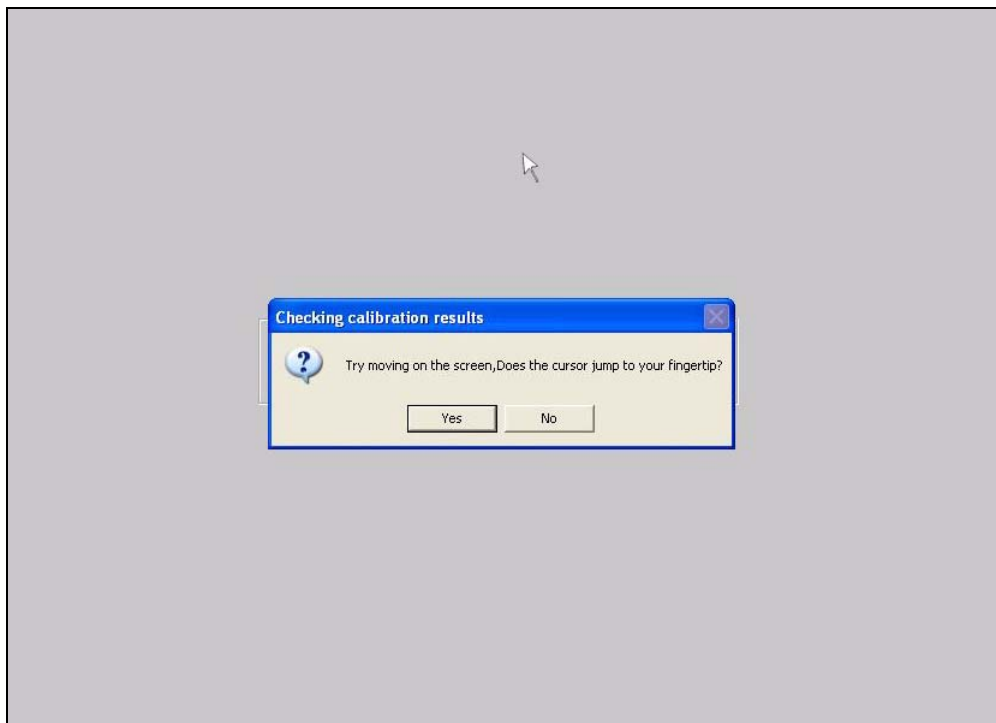


**Figure 3–23. GeneralTouch Touchscreen Properties**

6. Calibrate touchscreen by touching and releasing the red target as it moves from place to place on the screen (Figure 3–24 on page 3-28):
  - Touch/release the upper left target. The red target jumps to the lower right.
  - Touch/release the lower right target. The red target jumps to the upper right.
  - Touch/release the upper right target. The **Checking Calibration Results** dialog box displays (Figure 3–25 on page 3-29).
7. Check cursor movements. Touch anywhere on the screen checking to see if the cursor jumps to your fingertip. Do this several times.
  - Cursor followed your fingertip? Select **YES** and the calibration screen will close.
  - Cursor DOES NOT follow your fingertip? Select **NO**. The red upper left target will reappear; redo the calibration and recheck the cursor position.
8. On the desktop, double-click the kiosk icon to start the program.



**Figure 3–24. Touchscreen Calibration, Red Target**

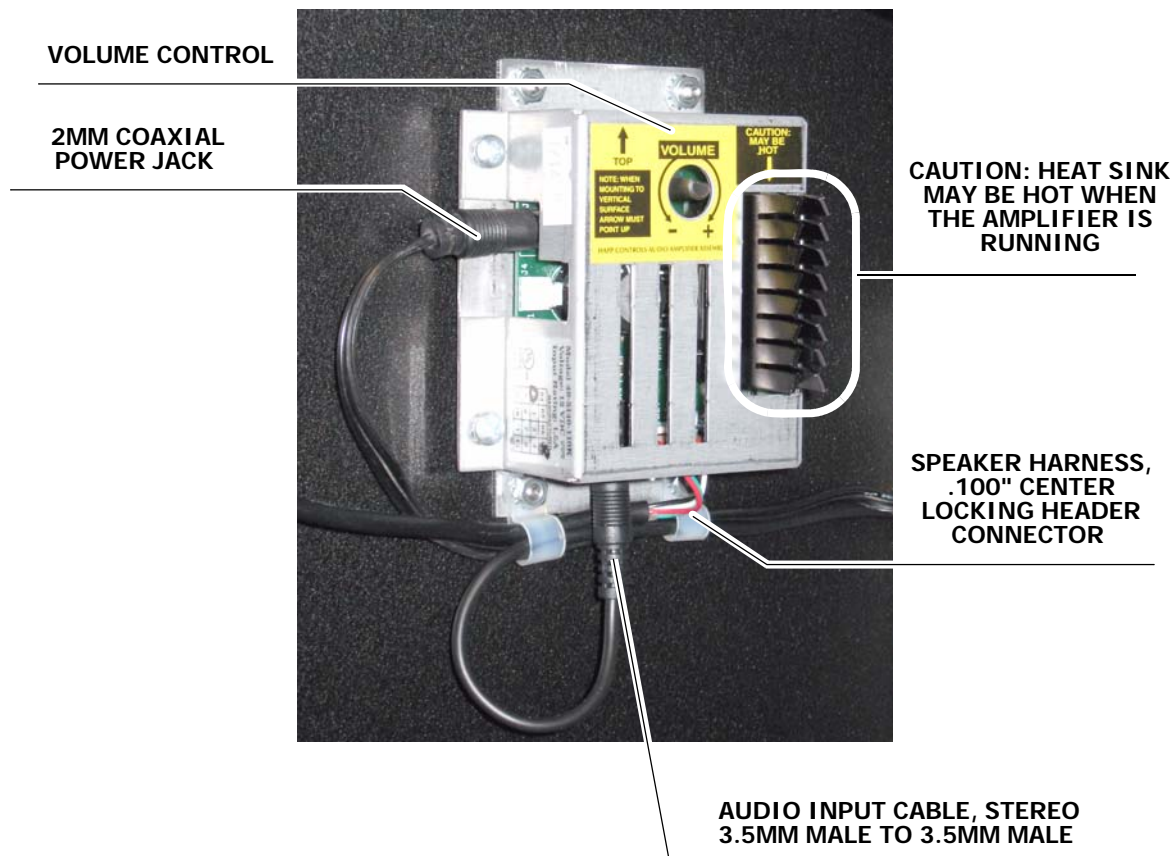


**Figure 3–25. Touchscreen Calibration, Verify Cursor Movement**

### 3.2.14 Remove/ Install the Audio Amplifier and Speakers

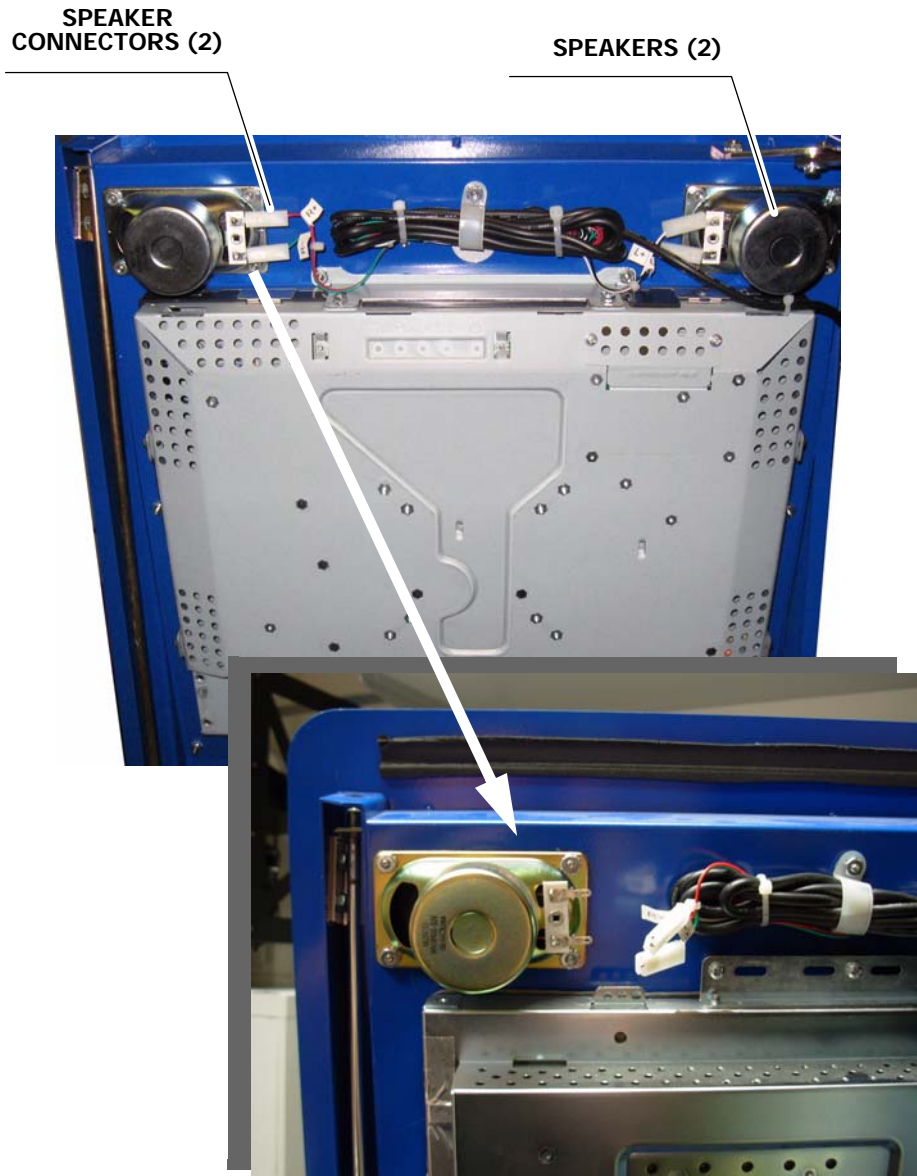
#### Remove Audio Amplifier and Speakers

1. Unplug amplifier from surge protector.
2. Wait a few minutes for the amplifier to cool.
3. Disconnect the following from the amplifier (Figure 3–26):
  - Power Cable
  - Audio Input Cable, Stereo 3.5mm Male to 3.5mm Male
  - Speaker Harness with .100" Center Locking Header Connector



**Figure 3–26. Audio Amplifier**

4. If the speakers or speaker cables need to be removed, disconnect the speaker wire harness from the two speakers ([Figure 3–27](#)). (If required, cut the cable ties securing the speaker wires to the top of the touchscreen.)
5. To remove the speakers, use a screwdriver to remove the four screws securing each speaker to the kiosk door ([Figure 3–27](#)).



**Figure 3–27. Amplifier Speakers**

6. To remove the amplifier, remove the eight screws securing the amplifier to the enclosure wall (see [Figure 3–26 on page 3-30](#)).

## Install Audio Amplifier and Speakers

7. Mount the amplifier to the kiosk enclosure, refer to [Figure 3–26 on page 3-30](#).



**CAUTION:** So that the Kiosk Amp heatsink does not overheat, the amplifier should be mounted so that the **arrow on the yellow label indicating TOP is pointed up**.

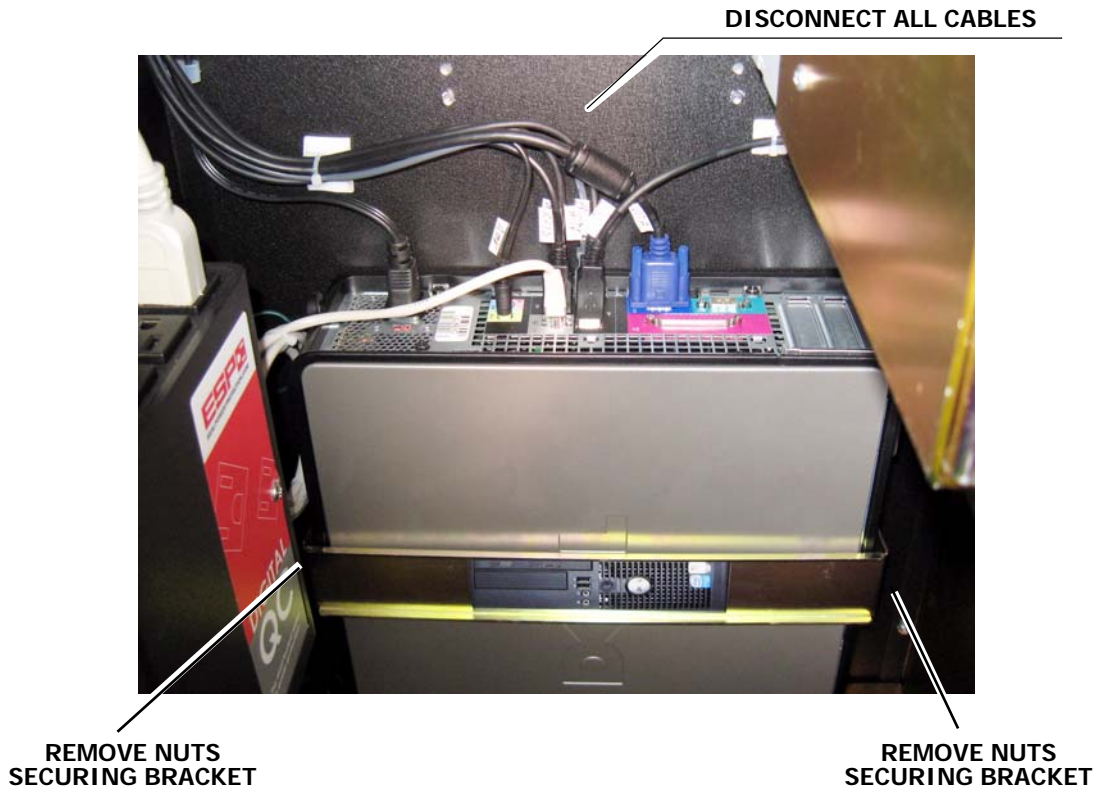
8. Set the volume control at its halfway point.
9. Reattach the following to amplifier.
  - Power Cable
  - Audio Input Cable, Stereo 3.5mm Male to 3.5mm Male
  - Speaker Harness with .100" Center Locking Header Connector
10. Mount the speakers to the kiosk door using the screws previously removed ([Figure 3–27 on page 3-31](#)).
11. Reattach the speaker wires to the speakers. Use cable ties to organize the wires ([Figure 3–27 on page 3-31](#)).
12. Plug the amplifier's power adapter into the surge protector.
13. If required, vary the volume by rotating the volume control toward the + or – as indicated on the yellow label on the amplifier.



### 3.2.15 PC Computer, Remove and Install

#### Remove PC Computer

1. Shutdown the kiosk and power off the computer. (For instructions refer to [“Shutdown the Kiosk” on page 1-7.](#))
2. Power OFF the surge protector.
3. Disconnect the power cable and all peripheral cables from computer ([Figure 3–28](#)).
4. Unplug the mouse’s cable from the front of the computer.
5. On each side of the computer, remove the nuts securing the support bracket.

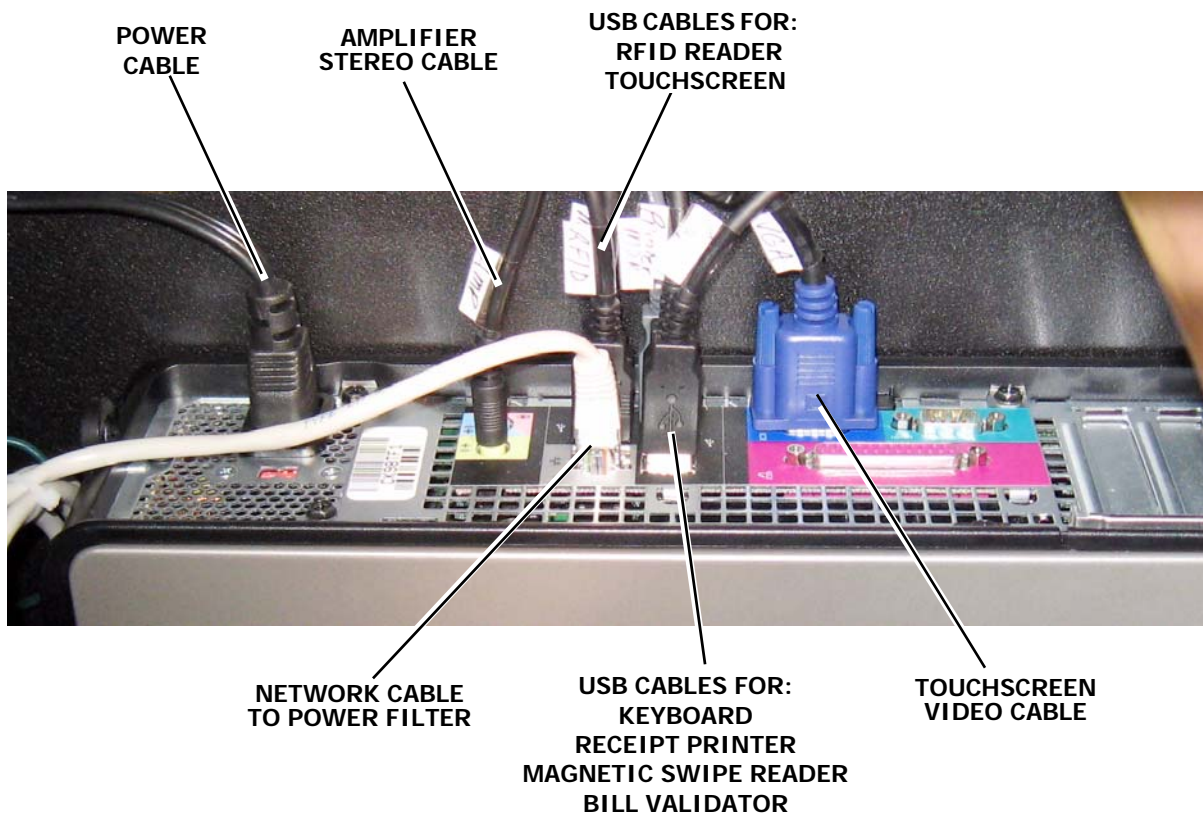


**Figure 3–28. Computer, Rear View**

6. Remove the computer from the kiosk.
7. This would be a good time to vacuum (or use a clean cloth) to remove dust build up from the bottom of the kiosk. Also, remove any receipts that may have fallen below the computer.

## Install PC Computer

8. Turn the computer facing downward, then place on the lower support shelf inside the kiosk. The face of the computer should be exposed through the cutout on the shelf.
9. Secure bracket to the enclosure wall with the nuts previously removed ([Figure 3–28 on page 3-33](#)).
10. Connect the power cable, network cable, and all peripheral cables to the computer ([Figure 3–29](#)).



**Figure 3–29. Computer, Rear View, Close-up**

11. Connect the mouse's USB cable to a USB connector on the **FRONT** of the computer.
12. Power ON the surge protector.
13. Power ON the computer, refer to [“Startup the Kiosk” on page 1-5](#).

# SECTION 4

## TROUBLESHOOTING

### 4.1 TROUBLESHOOTING ISSUES AND CORRECTIVE ACTIONS

Table 4–1 provides troubleshooting information for the kiosk hardware. The table includes symptoms, possible causes, and the suggested actions to correct errors and hardware problems. Additionally, the table may refer you to maintenance or cleaning procedures in other sections of this manual.



**NOTE:** Maintenance should be performed only by qualified personnel. Read and heed all warning, caution, and note signs posted on equipment. Follow all safety precautions in the [Safety](#) section of this manual.

**Table 4–1. Troubleshooting Issues and Corrective Action (Sheet 1 of 4)**

Symptom	Possible Cause	Suggested Action
<b>MAGNETIC STRIPE READER</b>		
1	MSR cannot read card.	<ul style="list-style-type: none"> <li>Card's magnetic stripe is defective or blank.</li> <li>Try swiping another card.</li> </ul>
	Problem with PC computer connection.	<ul style="list-style-type: none"> <li>Reboot PC computer.</li> </ul>
	Problem with USB connection.	<ul style="list-style-type: none"> <li>Check MSR, verify that the device is ON (LED is lit).</li> <li>Check that the USB cable is securely connected to MSR and to the computer port.</li> <li>Replace the USB cable if there still is no power or computer connection.</li> </ul>
	MSR is malfunctioning.	<ul style="list-style-type: none"> <li>Replace device.</li> </ul>

**Table 4–1. Troubleshooting Issues and Corrective Action (Sheet 2 of 4)**

Symptom		Possible Cause	Suggested Action
RFID READER			
2	Device is not reading wristband.	• Device is not configured.	• Configure device, <a href="#">“Setup PIN Number” on page 2-5.</a>
		• Device is OFF	• Check USB connection.
		• Device is malfunctioning.	• Run diagnostic <a href="#">“Perform a Self Diagnostic Test” on page 2-12.</a> If required, replace device. Contact PDC Technical Support.
3	Device is not writing to wristband.	• Device is not configured.	• Configure device, <a href="#">“Setup PIN Number” on page 2-5</a>
		• Device is OFF	• Check USB connection.
		• Device is malfunctioning.	• Run diagnostic <a href="#">“Perform a Self Diagnostic Test” on page 2-12.</a> If required, replace device. Contact PDC Technical Support.
BILL VALIDATOR ACCEPTOR MODULE AND CASHBOX)			
4	Bill acceptor: red LED or yellow LED is lit solid or flashing.	Hardware or network fault.	Refer to <a href="#">Table 4–2, “Bill Validator: Status LEDs on the Acceptor Module,” on page 4-5.</a>
5	Bill jam in acceptor module.	Bill inserted was in poor condition (wrinkled, torn, etc.).	Clear jam, refer to <a href="#">“Clear Jams in the Acceptor Module” on page 3-16.</a>
6	Bill jam in cashbox.	Bill inserted was in poor condition (wrinkled, torn, etc.).	Clear jam, refer to <a href="#">“Clear Jams in Cashbox” on page 3-16.</a>
7	Acceptor module: GREEN LED flashing.	Hardware or network fault.	Refer to <a href="#">Table 4–2, “Bill Validator: Status LEDs on the Acceptor Module,” on page 4-5.</a>
RECEIPT PRINTER			
8	Printer LEDs are not lit, flashing etc.	Hardware issues.	Refer to <a href="#">Table 4–5, “Receipt Printer, LED Status Codes,” on page 4-9.</a>
9	Printer not working.	• Print head is open.	• Check that the print head is closed.
		• Power off or disconnected.	• Check power cable and power supply to the printer.
		• Paper-out-sensor not working.	• Contact PDC for repair or replacement of printer.

Table 4–1. Troubleshooting Issues and Corrective Action (Sheet 3 of 4)

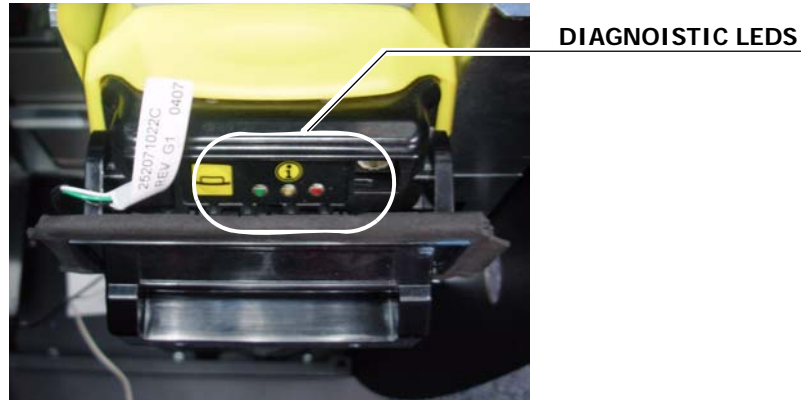
Symptom		Possible Cause	Suggested Action
10	Paper is not cut.	• Cutter blade needs to be replaced.	Contact PDC Technical Support or refer to the manufacturer's service manual (downloadable from manufacturer's website).
		• Connector to cutting motor is not fully seated on the control board.	
11	Improper cutting of paper. (uneven top and bottom document edges).	Paper particles in cutter or presenter modules.	Switch OFF printer and clean paper path, refer to <a href="#">"Clear Paper Jams in the Receipt Printer"</a> on page 3-4. If problem continues contact PDC Technical Support.
12	Inconsistent cutter operation.	Cutter-home sensor needs to be cleaned.	Contact PDC Technical Support or refer to the manufacturer's service manual (downloadable from manufacturer's website).
13	Missing print or irregular spots.	• Paper may be too humid.	• Let the paper roll adapt to the ambient temperature and humidity for 24 hours.
		• Paper does not meet the paper specification.	• Replace paper roll with paper that meets the specifications listed in <a href="#">Table 1–8 on page 1-18</a> .
14	White longitudinal lines in the printout.	Faulty print head.	Contact PDC Technical Support or refer to the manufacturer's service manual (downloadable from manufacturer's website).
15	Faint print on receipt.	• Paper does not meet the paper specification.	• Use a paper roll that meets the specifications listed in <a href="#">Table 1–8 on page 1-18</a> .
		• Print head needs to be cleaned.	• Clean print head with ethyl or isopropyl alcohol. Refer to <a href="#">"Clean the Print Head on the Receipt Printer"</a> on page 3-5
		• Print contrast needs adjustment.	• Contact PDC Technical Support.
16	Strange characters or graphics printed or any kind of strange printer behavior.	Might be caused by erroneous data sent from the host computer.	Contact PDC Technical Support.
17	Self-test mode: Nothing prints when pressing the <b>FEED</b> , but the document is transported, cut, and ejected.	• Printing on wrong side of the thermal paper.	• Check that the thermal sensitive side of the paper is facing up.
		• Paper does not meet specifications.	• Check that you are using the correct paper for the printer.
		• Print head's cable improperly connected.	• Check the print head's cable connection.

**Table 4–1. Troubleshooting Issues and Corrective Action (Sheet 4 of 4)**

Symptom		Possible Cause	Suggested Action
18	Self-test mode: Prints OK, but the printer works strangely in normal operation.	• Interface cable improperly connected.	• Check that both ends of the interface cable are properly connected.
		• Printer program issue.	• Contact PDC Technical Support.
TOUCHSCREEN			
19	The monitor does not respond after you turn on the system.	• Power Switch is OFF.	• Check that the monitor's Power Switch is ON.
		• Power cord or signal cable are damaged.	• Turn off the power and check the monitor's power cord and signal cable for proper connection.
20	Characters on the screen are dim.	Touchscreen brightness requires adjustment.	Adjust the brightness.
21	The screen is blank.	Power Save feature may have turned monitor off.	Press the monitor or any key on the keyboard to see if the screen reappears.
22	Screen flashes when initialized.	Problem with monitor.	Turn the monitor OFF then ON.
23	"Out of Range" displays	Computer resolution set too high.	Check to see if the resolution of your computer is higher than that of the LCD display. Reconfigure the resolution of your computer to make it less than or equal to 1280 x 1024. If required contact PDC Technical Support for assistance.
24	Touch doesn't work.	USB cable is loose or not attached.	Make sure the USB cable is securely attached to the touchscreen and the computer.

## 4.2 BILL VALIDATOR, TROUBLESHOOTING

To troubleshoot the Bill Validator, check the three LEDs on the face of the acceptor module for the validator's operational conditions. [Table 4–2](#) lists the LED states, indications, and corrective actions.



**Figure 4–1. Bill Validator: Status LEDs on the Acceptor Module**

- Green LED – indicates normal operation, as well as network issues and full cashbox.
- Yellow LED – indicates soft faults, which are correctable errors.
- Red LED – indicates hard faults which are hardware failures or full cashbox.

**Table 4–2. Bill Validator: Status LEDs on the Acceptor Module**

LED STATE	INDICATION	CORRECTIVE ACTION
<b>Green LED</b>		
● Solid	Normal	Indicates normal operation, no action required.
● One Flash	Disabled by machine interface.	Fix machine condition. For example, cashbox needs to be emptied.
● ● Two Flashes	Disabled by network interface.	Check network connection.
<b>Yellow LED</b>		
● Solid	Cashbox not seated or not installed.	Reseat or install cashbox.
● One Flash	Poor bill acceptance.	Clean the acceptor module. Refer to <a href="#">“Clean the Acceptor Module”</a> on page 3-14.
● ● Two Flashes	Jam in acceptor.	Unjam acceptor module. Refer to <a href="#">“Clear Jams in the Acceptor Module”</a> on page 3-16.



**Table 4–2. Bill Validator: Status LEDs on the Acceptor Module**

LED STATE	INDICATION	CORRECTIVE ACTION
● ● ● Three Flashes	Jam in cashbox.	Clear the jam, refer to <a href="#">“Clear Jams in Cashbox” on page 3-16.</a>
<b>Red LEDs</b>		
● Solid	Cashbox full.	Empty cashbox. Refer to <a href="#">“Empty the Cashbox” on page 1-11.</a>
● One Flash	Acceptor module hardware fault.	<ul style="list-style-type: none"> <li>• Replace acceptor module.</li> <li>• Return the malfunctioning acceptor module for repair or replacement.</li> </ul>
● ● Two Flashes	Interface board hardware fault.	<ul style="list-style-type: none"> <li>• Replace bill acceptor with a programmed spare.</li> <li>• Return malfunctioning acceptor module for repair or replacement.</li> </ul>
● ● ● Three Flashes	Unprogrammed unit.	Contact PDC Technical Support.



### 4.3 MAGNETIC STRIPE READER STATUS LED

The Magnetic Stripe Reader has a single LED that indicates the operational condition by a specific OFF/GREEN/RED lighting sequence. Table 4–2 lists the device state and the corresponding LED lighting sequences, indications, and corrective actions.

- Green LED – indicates normal operation.
- Red LED – indicates computer connection and hardware errors.

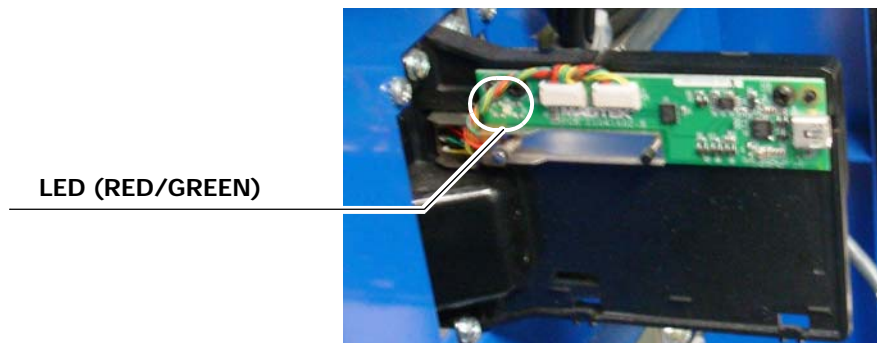


Figure 4–2. Magnetic Stripe Reader, Status LED

Table 4–3. Magnetic Stripe Reader, Status LED

DEVICE STATE	LED LIGHTING SEQUENCE	INDICATION OR CORRECTIVE ACTION
Device is OFF	OFF	Power ON the computer or check the USB cable connection.
Device is ON	●	GREEN LED indicates the device is working normally, no action required.
Device is powering up	● ●	<ul style="list-style-type: none"> <li>LED flashes RED until computer connection is completed.</li> <li>LED turns GREEN once device is ready for use.</li> </ul>
Device newly installed or reconnected to a different USB port	● ●	<ul style="list-style-type: none"> <li>LED turns RED while the device is being enumerated.</li> <li>LED turns GREEN indicating device is ready.</li> </ul>
Card Swiped	OFF ● ●	<ul style="list-style-type: none"> <li>LED turns OFF <i>temporarily</i> until swipe is completed.</li> <li>LED turns GREEN if there are decoding errors.</li> <li>If there were decoding errors, the LED turns RED for <i>approximately two seconds</i> to indicate an error occurred and then it turns GREEN.</li> </ul>
Host puts device in Suspend Mode	OFF	LED is OFF until the host takes the device out of suspend mode, at which time the LED will return to the state it was in prior to entering suspend mode.

## 4.4 RECEIPT PRINTER FEED BUTTON AND LEDS

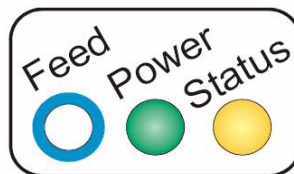
On each side of the receipt printer are the following: a **FEED** button, a Power LED (GREEN), and a Status LED (YELLOW) (Figure 4–3). Depending on how long the **FEED** button is pressed, the printer will perform several functions. Table 4–4 lists the functions that are available by pressing the **FEED** button.

The Power LED (GREEN) indicates power is ON and voltage is 24VAC. The Status LED (YELLOW) indicates printer status. Together these LEDs indicate the printer's operational status. Table 4–5 lists the LED states, indications, and corrective actions.

Printer errors are indicated when the Status LED (YELLOW) flashes rapidly. To display the error code, hold the **FEED** button and the Status LED (YELLOW) will blink. The number of blinks indicates the error code. Table 4–6 lists the error codes.

Printer error codes are reset:

- When the conditions causing them are removed.
- When the printer is turned OFF/ON.
- When the print head is lifted and then lowered.





**Figure 4–3. Receipt Printer Status LEDs**


**Table 4–4. Receipt Printer's Feed Button**

BUTTON PRESS	RESULT
Short Press	Eject printout from presenter rollers.
Longer Press	Feed, cut, and present a complete page. NOTE: Any data in the print buffer will be printed. If the buffer is empty the page will be blank.
Hold While Opening and Closing the Print Head	Print a self-test printout.

**Table 4–5. Receipt Printer, LED Status Codes**

LED STATE	INDICATION	CORRECTIVE ACTION
  GREEN AND YELLOW LED STATUS CODES		
Green LED – ON Yellow LED – ON	Normal operation.	24 VAC present, no action required.
Green LED – ON Yellow LED – OFF	Indicates problems with the 5VAC generation.	Replace unit. Contact PDC Technical Support.
Green LED – ON Yellow LED – Blink, Blink, PAUSE, Blink, Blink	Paper low.	Check paper roll. To add paper roll see <a href="#">“Install Receipt Paper” on page 1-8.</a>
Green LED – ON Yellow LED – Flashes Rapidly	Indicates error.	See <a href="#">Table 4–6, “Receipt Printer, Yellow LED Error Codes,” on page 4-9.</a>

**Table 4–6. Receipt Printer, Yellow LED Error Codes**

ERROR CODE	INDICATION	CORRECTIVE ACTION
<b>Printer Error Codes:</b> Holding the FEED button until the Yellow LED  flashes to display error codes. The number of flashes indicates the error code, refer to the list below.		
1 Flash	Presenter jam, paper cannot be ejected / retracted.	Unjam paper see <a href="#">“User Serviceable Components” on page 3-4.</a>
2 Flashes	Cutter cannot return to home position.	Contact PDC Technical Support.
3 Flashes	Out of paper.	Add paper roll see <a href="#">“Install Receipt Paper” on page 1-8.</a>
4 Flashes	Print head lifted.	Close print head.
5 Flashes	Paper feed error (under head).	Re-feed paper. Refer to <a href="#">“Install Receipt Paper” on page 1-8.</a>
6 Flashes	Temperature error, print head is above 60°C.	Contact PDC Technical Support.
7 Flashes	Presenter jam, motor cannot rotate.	Unjam paper see <a href="#">“User Serviceable Components” on page 3-4.</a>
8 Flashes	Paper jam during retract.	Unjam paper see <a href="#">“User Serviceable Components” on page 3-4.</a>
Flashes Rapidly	Fast flashes Checksum error, firmware.	Reinstall firmware, call PDC Technical Support.
Steady Light	Wrong firmware type or target for firmware loading.	Call PDC Technical Support.



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### NOTES

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